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## Original Communications.

### *ON THE TREATMENT OF RHEUMATISM AND NEURALGIA BY THE ELECTRO-VAPOR BATH AND MASSAGE.*

By F. E. Stewart, M.D., Ph.G.,* Wilmington, Del.

(Concluded from page 240.)

III.—NEURALGIA.

It is not always easy to make a sharp distinction between neuralgia and muscular rheumatism, for the two closely resemble each other and often coexist. One theory declares that muscular rheumatism is the same as neuralgia, and consists of nothing else than a morbid irritation of the sensory nerve-endings of the affected parts. There are points for the differential diagnosis of these affections. While in muscular rheumatism the pain is diffuse, being distributed over a whole muscle or group of muscles, in neuralgia it is felt along the course of the supplying nerve and its branches. Then, too, while neuralgia is marked by exacerbations, the pain of muscular rheumatism is generally continuous.

There is another difference between these two affections which is quite important in treatment. As a rule, muscular rheumatism is benefited by the first treatment, while neuralgia, especially when the nerve is very sen-

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sitive to the touch, is often made decidedly worse. This rule is not invariable. It is well to caution patients, however, that such is frequently the case, otherwise they may not come back for the second treatment, to the injury of your reputation.

Schreiber, one of the best authorities on massage in Europe, appears to accept the views of J. Mortimer Granville, who regards abnormal vibrations in the nerve-fibres as the cause of neuralgia. According to this authority, mechanical vibration of the nerves is considered to remove pain by converting the abnormal into normal vibrations. To this end he employs a percusser, with which a certain number of blows per minute may be given. I have found that vibrating the nerve by means of the faradic current will often stop the pain of neuralgia. The same current will frequently cause pain in a healthy nerve. I have observed the same phenomena with the continuous current,—with this modification, however: the continuous current often stops the pain when the interrupted current fails. Percussing the nerves rapidly with the tips of the fingers is an excellent method of stopping the pain in neuralgia. The same thing may be said of deep kneading over the affected nerve. The pain may disappear entirely, and in an hour's time return with greater force than before. It may disappear at the time of each treatment for three or four *séances*, returning each time with redoubled violence until the patient is completely discouraged; then disappearing after a few hours suddenly, and without another treatment, to reappear no more. These are peculiarities with which one should be acquainted in treating neuralgias. Schreiber has also observed that by the mechanical treatment neuralgia, especially of the sciatic nerve, is often made worse at first.

I am aware that muscular rheumatism and neuralgia often disappear without treatment, and that claims made for any method of cure, to obtain prestige, must show truly brilliant results before they can be accepted by the profession. When patients come to you, however, from the hands of skilful physicians who have utterly failed in the use of ordinary remedies, and are restored from an almost helpless condition by a few applications of electricity, heat, and massage, no argument is necessary to convince the patient, at least, regarding the efficacy of this method of treatment.

Of course, as Schreiber points out, it is of prime importance in the treatment of neuralgia that a correct diagnosis be made out before the *séances* commence, for the pain may be due to certain inflammatory processes, such as neuritis, periostitis, arthritis, spinal caries, coxitis, etc. The presence of these affections contraindicates this form of treatment. Whether the disease is of central or peripheral origin makes no difference, however.

Nothing can be more injurious in neuralgia than a rest of the part affected, for more or less profound nutritive changes are liable to occur and seriously impair the functions of the part involved. Motion, especially in the chronic stages, has achieved wonderful success in the treatment of neuralgia when it has become so chronic as to interfere with the functional activity of the part. To sum up, for the treatment of neuralgia use electricity, heat (electro-vapor or electro-thermo bath), and motion (massage, manual and mechanical, Swedish movements, health-gymnastics, and other forms of exercise).

The treatment of recent cases of neuralgia is very simple. The patient should be placed in the electro-vapor bath, as already described, with his feet in the hot foot-tub and the sponge electrode in his hand or in the hand of an assistant, and the electricity, preferably the mixed current, thoroughly applied to the affected part. In the mean time the vapor should be turned on, and the heat gradually raised until the temperature is as warm as the patient can comfortably bear it. The head should be kept cool by wetting it with cold water; care should be taken not to use either electricity or heat of sufficient intensity to produce nausea. If such an event occur the treatment should immediately be discontinued, and the patient should leave the bath and recline on a couch until the unpleasant sensations have disappeared. Neither should the patient be returned to the bath until the next *séance*, though the massage should be undertaken after a few minutes' rest.

Massage should be commenced by first anointing the part with cocoa-nut oil, for in cases of neuralgia I find the use of a lubricant of great advantage. The part should now be gently stroked with the hand, noting carefully the points of tenderness. Avoid these points and knead the surrounding muscles, gently and superficially at first, and then deeply and more forcibly. After continuing this manipulation for some five or ten minutes, repeat the same movements over the sensitive spots. This should be continued five or ten minutes longer, and then the parts should be rapidly and vigorously percussed with the tips of the

fingers. What is known as hacking may now be applied, if your patient is not a delicate lady, and he is a man who will submit to some rough usage, and not lose his confidence in your skill though he go away worse instead of better after his treatment. These treatments should be repeated every day or every other day, depending upon the endurance of the patient. The result may be a complete cure of the attack by means of from one to three treatments, or eight or ten may be required to effect a cure. As I said before, the first two or three treatments may increase rather than decrease the pain, but perseverance will meet its reward.

Schreiber* classifies neuralgias into the following divisions: (1) sciatica, (2) cervico-brachialgia, (3) cervico-occipital, (4) trigeminal, (5) intercostal.

*Sciatica.*—I have treated a number of cases of recent sciatica. The great length to which I have already extended this article is sufficient excuse for not reporting them at this time. My experience, however, can be summed up briefly. Some cases yield to treatment immediately, and, as they have been cases in which ordinary remedies have failed, there is every reason to believe that the electro-vapor bath and massage treatment stands first on the list as a remedy for sciatica.

Probably the worst case of sciatica was that of an old man of 70, afflicted with this malady for five months. Examination showed great sensitiveness at the point of exit of the sciatic nerve, and there were several painful points over the course of the nerve and its branches along the outer and inner aspects of the limb, both above and below the knee. For three months the patient was unable to stand upright. Part of the time he was only able to drag himself painfully along by the use of his cane; and he sat near the fire all night rather than endure the pain and fatigue incident to disrobing and retiring to his bed. In addition to his sciatica, he suffered severely with dyspepsia and constipation. Six treatments with the electro-vapor bath, employing the mixed current, cured the attack. I also prescribed the pancreatine and quinine mixture already referred to, and ordered the patient to drink a cup of hot water every day on rising in the morning. Under this course of treatment the condition rapidly improved, and in three weeks, during which time he took six treatments with the electro-vapor bath (galvano-faradic current) without massage, he was entirely restored to health.

My results were none the less fortunate in another case of sciatica. The patient had suffered with the complaint for three weeks, and was in constant pain. There were several painful spots in the thigh and buttocks. He was made worse by each treatment, but after the third treatment all pain and soreness suddenly disappeared, and on last accounts there had been no recurrence of the malady.

Extensive neuralgias are sometimes cured in a short time, while localized ones often tax the patience of both physician and patient. Yet, as a rule, the duration of the treatment will depend on the previous length of the illness, the extent of the disease, and the age and general nutrition of the patient. I have been fortunate in the selection of my cases. The question arises, Is it possible to cure cases of sciatica of long standing by means of the electro-vapor bath and massage? Undoubtedly a great many of these cases are curable. Much depends on the skill and experience of the physician, and the perseverance of both doctor and patient. Schreiber cures cases of this kind by the use of massage and systematic exercise, without the use of electricity, and there is every reason to expect results even more brilliant by combining with his treatment the powerful adjuncts electricity and heat, by means of the electro-vapor or electro-thermal bath.

Let us take, for example, Schreiber's typical case of sciatica and crural neuralgia described in his book:

"A patient suffering from well-marked sciatica and crural neuralgia of the right side applies for relief, after having been under treatment by others for many years in vain. He has used veratrine, aconite, and belladonna ointment, morphine injections, electricity, sinapisms, and vesicants. We may assume, also, that for a considerable period he took arsenic, quinine, and potassium iodide and bromide; that he has been to a number of springs, like Gastein, Wiesbaden, Teplitz, and Ragaz; and also that neither sea-bathing nor hydrotherapy has had any effect on his obstinate malady. He is only able to drag himself painfully along by the use of a cane, and every step causes acute suffering. Rising and sitting down can only be accomplished by aid of the arms, while for going up-stairs or getting out of bed the assistance of an attendant is necessary. He is never entirely free from

* "A Manual of Treatment by Massage and Methodical Muscle-Exercise," by Joseph Schreiber, M.D., Director of the Sanitarium "Alpenhein," Austria. Translated by Walter Mendelson, M.D., of New York. Lea Brothers & Co., Philadelphia, 1887.

pain, and there is generally a daily exacerbation, lasting often several hours, and preventing much-needed rest.

"Examination shows no other functional disturbances. There is great sensitiveness in the buttock, at the point of exit of the sciatic nerve, and many painful points exist along the outer and inner aspects of the thigh. The limb, furthermore, will be seen to be held in a characteristically pathognomonic position,—namely, the thigh rotated inward and adducted, the knee slightly bent, and the foot not resting on the ground with the sole, but touching it with the toe only.

"On sitting down, the patient supports himself by his left arm, and lets himself fall, as it were, upon his left buttock, instead of performing the usual movements of flexion with knees and hips. The involvement of the semitendinosus and semimembranosus muscles causes great sensitiveness over their tendons. Voluntary abduction of the affected thigh is impossible, and abduction of even the well extremity cannot be performed on standing erect, on account of inability of the patient to support himself upon the affected limb. External rotation is also impossible. Hence it appears that the glutei, the pyriformis, the internal obturator, and the gemelli (external rotators) are all affected. Nor can the patient flex the thigh (involvement of the iliac and psoas major), nor can he adduct it after it has once been passively abducted (involvement of the sartorius, internal rectus, adductor longus, brevis, and magnus, and pectineus). But the greatest pain of all is caused by rotating the thigh outward, as the sciatic is thus made to glide upon and rub against the quadratus femoris.

"I have purposely selected a case in which all the muscles of the buttock about the hip-joint and of the thigh have become involved, and hence almost entirely deprived of function. Many years of experience, and many trials, have convinced me that the cure of these forms of sciatica will be most rapidly effected when, in addition to the mechanical interferences, passive and active motions of all the affected muscles are employed. It has also seemed to me best to begin the daily treatment with the passive and active movements, leaving the mechanical manipulations, which are very painful, till the last. They cause so much exhaustion, as a rule, that the patient is anxious only for rest, and will hardly have the energy necessary for performing acts which he knows must only increase his suffering."

Here follows a description of thirty-two days of treatment, in which massage and systematic muscular exercise are the agents employed. He commences with the simplest procedures, such, for example, as flexing the thigh, and gradually advances to the more complicated ones, requiring the use of the horizontal bar, special manipulating bench or table, wooden blocks for teaching the patient to walk, placed at regular intervals on the floor, etc. The treatment is of an accumulative nature, each day something new being added, and the treatment of the previous days being repeated. The treatments from the thirteenth to the twentieth day will illustrate this: "Repetition of all the different modifications of stepping on and over the bar. Sitting exercises (generally very hard for the patient). Repetition of all previous bench exercises.

"Walking, running, and kneeling exercises (kneeling first on a chair, then on a stool, and then on a cushion on the floor, and rising again, first with, then without, assistance).

"For the close of the daily programme all the different mechanical manipulations."

The eleventh day of treatment is to be observed as a day of entire rest. The same applies to the twenty-first and thirty-first days of treatment.

On the thirty-second day "the cane, which was for so many years the patient's trusted companion, will have been discarded, and going up and down stairs (the latter being always the more fatiguing) will now be possible without assistance. He will now be able, too, to kneel, or even to leap. Most of these actions are performed without any pain whatever, while in some there is still a certain amount of both awkwardness and pain.

"Nocturnal pain is gone entirely, and in consequence sleep becomes natural once more.

"The motions which will still be difficult and painful are those of squatting and of turning while lying."

In regard to turning over while lying, after describing what muscles are put into action during this manœuvre, the author goes on to say, "We therefore seek to force him to use the affected side in these actions instead of the well one, and the acquirement and practice of the necessary exercises will, therefore, occupy the balance of the curriculum of treatment, which may last in all from six to eight weeks. Meanwhile, the mechanical manipulations must be continued until not a trace of sensitiveness remains. During the last few

weeks, it will generally be sufficient to practise with the patient, who may now be fairly regarded as convalescent, every second, third, or fourth day. Only when all the exercises can be faultlessly executed can he be discharged as perfectly cured."

In looking over the cases given by Schreiber, I am free to confess that thus far I have never had a patient suffering with sciatica affected with a type of the malady so chronic and severe. I feel very sure, however, from my experience with the electro-vapor bath in combination with massage, that the bath could be added to the treatment every other day with immense advantage.

*Cervico Brachial Neuralgia.*—I have had several cases of this form of neuralgia under my care. Schreiber describes the affection in the following language: "Cervico-brachial neuralgias, corresponding to the distribution of the four cervical nerves and a part of the first dorsal, affect the shoulder, pectoralis, the arm and forearm, and the region over the spinous processes of the four lower cervical and the two upper dorsal vertebræ. The painful points are numerous, and are distributed as follows: in the axilla, at the lower angle of the scapula, on the back of the shoulder, in the flexure of the elbow, and at the points of exit of the branches of the musculo-cutaneous nerve and of the ulnar nerve above the internal condyle, at the wrist-joint, and along the radial nerve. Marked exacerbations of pain sufficiently severe as to rob the patient of sleep are common at night.

"My experience with these cases has been limited to comparatively recent ones, extending over a period from two to six weeks. One of them had been suffering with this trouble for several months, however. With the latter exception I have cured every case inside of six treatments, although several were of a severe type, the patient being unable to move the arm except a few inches and suffering severely. The latter case was that of a very old lady afflicted with anæmia and extreme debility. She took one treatment, which made her so much worse that she was discouraged, but entirely recovered from her complaint during the use of a preparation of bullock's blood, extract of malt, whiskey, and glycerin, which I have devised and named Hæmoglobin Compound."

Schreiber's cases are treated during twenty-two days by the systematic application of massage and muscular exercise. The remarks made upon prognosis and upon duration of treatment in considering sciatica are equally applicable to cases of chronic cervico-brachial neuralgia. Schreiber's observations agree with mine, that in recent cases, even though the distribution of the neuralgia be quite extensive, a cure may be often effected in the incredible short space of from twelve to twenty-four hours, simply by the aid of energetic passive and active exercise. Especially is this true if the exercise follow the electro-vapor bath. In fact, the bath alone is often sufficient to effect a cure in this short space of time. Where the disease has existed for several years, however, it is absurd for a patient to expect a cure from one or two applications of any treatment no matter how great is its value.

*Cervico-Occipital Neuralgia.*—This form of the disease generally accompanies neuralgia occurring in the nerves situated elsewhere in the scalp. Schreiber says, "I have never had the opportunity to observe an uncomplicated case of this trouble, but I have often seen it associated with neurasthenia and cephalalgia. The great occipital nerve is the one most frequently involved. The pains radiate towards the vertex and forehead, and are often combined with trigeminal neuralgia. Mechanical manipulation—pressing, kneading, pinching, and mild hacking—of the muscles affected (trapezius, sterno-cleido-mastoid, splenius capitis et colli) proved in all cases efficacious, generally effecting a cure of the occipital neuralgia in from two to four weeks, while the vertical and frontal persisted. Active motion of the head in all directions, including rotation, is a useful auxiliary to the purely mechanical treatment."

I had under my care for some months a physician (oculist) suffering with neuralgia affecting the sciatica nerve, lumbar nerves, and the nerves of the neck and occiput. He had been run down in health for about nine years, but under the use of the electro-vapor baths, galvanic current, followed by massage, both manual and mechanical, the latter being applied by the Taylor mechanical manipulator run by means of an electro-motor, his health greatly improved. The neuralgia of the occiput remained after the other symptoms abated. There was also associated therewith a good deal of pain over the eye, extending backwards over the head. What is interesting more particularly in this case is, that when the interrupted galvanic current was applied to the occiput, the other pole being placed at the feet, not only were flashes of light perceived in the eye, but the power of accommodation was so much improved

that the wall of the room in front of the patient seemed about two feet nearer to him than before. The constant use of his eyes in his confining work would frequently cause a neuralgia extending from the frontal region, over the head, and down the back. This condition has been greatly improved by Professor Thomson, of Philadelphia, who corrected some obscure error of refraction in the doctor's eyes. It has been further improved by a subsequent correction of some insufficiency in one or more of the recti muscles by the doctor himself.

*Trigeminal and Intercostal Neuralgias and Cephalalgia.*—Trigeminal or trifacial neuralgia is a very difficult affection to remove when it becomes chronic. The pain may be alleviated or entirely disappear, but the improvement is generally transient. Recent cases due to malaria, exposure to cold, anæmia, decayed teeth, etc., are curable and disappear when the cause is removed. The tendency to this disease is often inherited, and the disease itself, after it has existed a long time, often produces structural changes in the neurilemma of the nerves or of the Gasserian ganglion. Then, too, the nerve is so situated that the energetic treatment employed so successfully in the cure of other neuralgias is out of the question here. Intercostal neuralgia is better adapted to this form of treatment than the preceding. Only mild currents and mild manipulation can be employed about the head, but more energetic treatment is permitted over the chest. Here again, however, the nerves are not easy of access, and it is impossible to apply manipulation to them successfully in all cases. Then, too, care must be taken not to employ too strong a current in the region of the heart. However, when the cases are of recent origin a few treatments with the electro-vapor bath are frequently sufficient for their cure. I have seen several recent cases completely disappear in five minutes without any other treatment than the application of the Taylor mechanical manipulator over the sensitive spot. One case in particular suffered so much pain that pleurisy was feared by the patient. Being a trained *masseur*, a graduate of the Central Royal Institute of Stockholm, he was well aware of the benefit to be derived from manipulation, so he sat down in front of the machine, placed the rubbing-pad on his chest, and in five minutes the pain was gone not to return again. In the treatment of cephalalgia due to anæmia, hysteria, or neurasthenia, uterine and ovarian diseases, chronic gastritis, and all varieties of headache arising from exposure to cold, this form of treatment, especially used in combination with other remedies, is invaluable. "Sick headache" does not yield to massage alone, but is often cured by the electro-vapor bath, followed by general manipulation.

I have run over the subject of the treatment of muscular rheumatism and neuralgia in these three articles in a rapid manner, but by no means exhaustively. The limits of a journal article will not permit a thorough discussion of the subject. However, if I have said enough to excite the interest of the profession in the study of this important branch of therapeutics, the object of my paper has been accomplished. By purchasing Schreiber's work and referring to the bibliography in the back of the book, or by sending to the surgeon-general's office at Washington, a complete list of the literature in this department may be obtained as far as massage and the Swedish movements are concerned. In regard to the electro-vapor bath, I am not acquainted with literature of any importance on that subject, and hope that my communication may be of special value on that account.

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## *SOME USES OF CALCIUM SULPHIDE.*

By Mortimer Willson, M.D., Port Huron, Mich.

IN this drug we have a convenient vehicle for the administration of sulphur or hydrogen sulphide. Most of the mineral waters of Eastern Michigan are dependent on this element for their therapeutic value.

Calcium sulphide is either decomposed by the alkalies of the intestinal secretions and a portion of the $H_2S$ absorbed by the blood-vessels, or it enters the blood as calcium sulphide, and is there decomposed by the carbonic dioxide while traversing the pulmonary capillaries, where the movement of the $CO_2$ is most energetic.

$H_2S$ is eliminated mainly by the lungs, but also by the skin and the glands. It has been found in the urine.

Its action on lesions far removed from the field of the intestinal-hepatic-pulmonary segment of the blood circuit is in itself a strong presumption in favor of the theory of its entrance into the general circulation; and its presence in the urine proves it, though its absence there would be no disproof of the hypothesis, as undoubtedly the greater part

is oxidized into sulphates before being excreted.

The physiological action of the sulphide is largely due to its stimulating effect on the blood-current, especially that of the pelvic organs, the glands, and glandular elements of all mucous membranes, as well as those of the skin. The action on the circulation increases normal or subnormal secretion, and checks that due to venous congestion or blood stasis.

Though this action is noticeable in all glands and gland-bearing membranes, bronchial, intestinal, dermal, it is somewhat selective of the bronchial and genito-urinal mucous membranes.

The fact that $H_2S$ has much value in subduing bronchial congestion and inflammation has been fully established by the concurring testimony of the many who, in recent medical journals, have given us their experience in the use of Bergeon's method of treating phthisis.

The power of calcium sulphide to modify the suppurative process first called attention to the drug. I had on many occasions tested its value in checking and aborting incipient abscesses; and thinking its antipyogenic action might be employed where pus is formed in a mucous membrane, I prescribed it for the first time in 1883 as a remedy for leucorrhœa.

The improvement was very marked within a week, and in two weeks a complete cure was obtained.

But, besides this result, the skin, which had been sallow, mottled and roughened, became clear and fresh in comparison, and a feeling of well-being took the place of former languor.

Since then I have prescribed it in more than one hundred cases of simple leucorrhœa, or those not depending on ulceration; and, without local treatment, have in no case seen a failure to alleviate if not to arrest completely, and in many cases permanently, this most annoying and debilitating disease.

When there is ulceration, local treatment will usually have to be added; but in simple cases calcium sulphide, in doses of 1 to 3 grains, night and morning, or after each meal, will in the great majority of cases be sufficient for a cure.

In specific vaginitis its power is not marked. I believe the glandular element is so modified in its action by the medicine that these good results follow, and this in turn is brought about by a change in the rate of the blood-current and the restraining influence of the $H_2S$ on the amœboid movements of the leucocytes.

Whoever will faithfully try the remedy in the class of cases indicated will find that he can in most cases discard hot water, astringent injections, and suppositories, and will cure his patient without advertising her malady to her family or household servants.

Rhinitis, especially the hypertrophic stage, is generally benefited by a course of calcium sulphide. I have treated a sufficient number of cases to have assured myself of the real value of the remedy. Catarrhal deafness has in a number of cases been very markedly improved.

Case I.—In the summer of 1885 I was asked to prescribe for A. W., aged 9, who was said to be suffering from a slight nightly hemorrhage from the mouth.

*Examination.*—Tonsils enlarged, glandular hypertrophy of the vaults of pharynx and membrane over posterior end of turbinated bones occluding posterior nares.

Anterior rhinoscopy showed marked hypertrophy of the pituitary membrane. Patient had thick, muffled voice and dull physiognomy, characteristic of those children who suffer nasal occlusion. Her hearing was somewhat impaired. The hemorrhage came from a small round ulcer on one of the tonsils, and an astringent application soon checked it. I prescribed calcium sulphide, ¼ grain, three times a day.

In a month the child was so far improved that she breathed freely through the nose, and her hearing seemed as acute as ever. She suffered no inconvenience from her former condition. No local treatment was used. As she lived some distance in the country, I had only her parents' word for her improved condition; but they were intelligent people, and told me she had not been so well for two years as she had since taking the "little pills."

Case II.—November 5, 1886; C. S., aged 22. He had suffered from hypertrophic rhinitis for a number of years. Every winter he had been much worse, and his hearing was much impaired; respiration through nostrils greatly hindered. Examination showed membranes covering turbinated bones much thickened posteriorly and anteriorly, with scanty secretion; hypertrophy of tonsils and glands of the pharynx vaults; general health good. Prescribed calcium sulphide, and to abort, if possible, any fresh attack of coryza, a snuff of camphor, morphine, and atropine.

*December* 22.—Examined patient again.

There was a very decided lessening in the thickness of the hypertrophied tissues; he could breathe pretty freely through both nostrils; his hearing had very much improved, and the young man was very jubilant over his improved condition at a time of the year when he usually suffered most.

As there was still much to be desired in his condition, I ordered treatment continued.

*February* 12, 1887.—Patient in town for the first time since December 22. He has suffered little during that time. Much improvement has taken place. He had suffered very little, if any, sense of obstriction to the passage of the air through his nostrils; hearing nearly normal; he could easily inflate the middle ear; the frontal headache, which had always accompanied his catarrhal troubles, was gone.

I ordered a discontinuance of the medicine; but in March he contracted a cold and became worse. The medicine was resumed, and taken alternate weeks until the warm weather allowed him to discontinue it. I last saw the patient August 27, 1887. He was free from any conscious presence of his former trouble. Examination revealed, not indeed a normal, but nearly normal, condition of the former diseased structures. I advised a change of climate to prevent a recurrence of the disease.

In one case, where ozæna accompanied a still hypertrophied condition of the nasal mucous membrane, the hypertrophy yielded somewhat to the drug; but the foul odor was corrected only by using a spray containing hydrogen peroxide.

The climatic conditions here are very much against us in trying, by any means, to obtain a permanent cure of chronic nasal catarrh; but for those who are unable to change their place of residence, the sulphide is a very convenient and valuable palliative.

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## *THE THERAPEUTIC VALUE OF PICHI (FABIANA IMBRICATA).*

By Peyton Green, M.D., Wytheville, Va.

THIS remedial agent, which has been introduced to the profession within the last few years, is the product of a plant indigenous to Chili. The parts employed in the manufacture of the drug are the stems and leafy branchlets. In the country of its habitat it has attained quite a reputation in the treatment of diseases of the urinary tract, being especially recommended in cases of catarrhal inflammation of the mucous membrane of the bladder and kidneys. In addition to its diuretic and terebinthinate properties, it is said to be an efficient stomachic tonic and hepatic stimulant.

The writer has had occasion of late to resort to its use, but his attention has been directed more especially to its diuretic and sedative action upon the urinary organs, than to its other therapeutic effects. Although its use has not been as general as it must necessarily become when its properties are more fully appreciated, yet it has been sufficiently prescribed, and its effects noted, both in hospital and private practice, to demonstrate the beneficial results attending its use in that class of cases indicated above. As is the case with most new remedies, exaggerated reports of its curative effects were at first made, and wonderful properties attributed to it, among others that of a powerful lithontriptic.

It is proper to state, however, that these properties were claimed for it before it had been subjected to thorough scientific investigation. Numerous cases were reported in which cystic calculi of large size were dissolved by it, and the patients entirely relieved, even when all hope, other than surgical interference, had been abandoned by the medical attendants. Although it has not been the good fortune of the writer to observe these heroic effects, cases are cited, upon good authority, in which its action as an antilithic has been satisfactorily demonstrated.

The most reliable preparation of the drug is the fluid extract. This should be given in doses of ♏xv to f℥i three times a day, or at more frequent intervals, at the discretion of the attending physician. The taste is bitter, and somewhat disagreeable when given *per se*, hence it is best administered in water, simple elixir, or some other menstruum. When given in water an alkali should be added to render it miscible. It may often be of advantage to combine it with another diuretic, one of the potassium salts, for instance. The following formulæ will be found to act well:

℞ Fluid ext. pichi,
Fluid ext. buchu, aa f℥i;
Elix. lactated pepsin, f℥ii. M.
Sig.—A teaspoonful every four hours.

℞ Potass. acetate, ℥ss;
Fluid ext. pichi,
Simple elixir, aa f℥ii. M.
Sig.—A teaspoonful three times a day.

If its stomachic and hepatic effects are desired, it may be conveniently given in combination with any of the numerous tonics in the materia medica.

The writer regrets that his notes upon cases treated with pichi are not more voluminous, but the following may serve to point out some of the results accruing from its use:

CASE I.—Miss E., aged 20; average height; weight, 125 pounds; was taken sick in September, 1886, with some affection, the exact nature of which is not remembered by the physician then attending her. It was, however, trivial. In the course of a few weeks she suffered with retention of urine, which was purely hysterical. Unfortunately, a catheter had to be introduced, and it has been in use ever since,—nearly eighteen months. The instrument has been withheld on various occasions with the idea of forcing the bladder to empty itself because of the abnormal distention, as suggested by Ashhurst and other surgeons, but in each instance the attempt proved abortive, and hysterical mania, with loss of consciousness, supervened. At the commencement of the retention a self-retaining, hard rubber catheter was introduced. In some mysterious manner this was broken in two, and a piece an inch and a half long passed into the bladder. Subsequently the piece was removed by an incision into the organ through its anterior wall. The operation was entirely successful and its results perfectly satisfactory. It has now been fifteen months since the piece was removed. It may be remarked here that this is the second attack of hysteria from which the patient has suffered, the first attack occurring five years ago, and lasting fourteen months. The writer has had charge of her only during the second attack, and his attendance dates from about the time of the operation just referred to. During this time, at varying intervals, there has been great irritability of the bladder, due to an excess of the phosphates, at times giving to the urine an opaque, milky appearance, and even adhering to the catheter when it was withdrawn. The usual diuretics and sedatives were resorted to, but with little success, relief only being obtained by washing out the organ. Finally, pichi was suggested by a fellow-practitioner, and since then no trouble has been experienced in controlling the condition. It has now been six months since the patient had an attack, but before pichi was used the attacks were often of weekly occurrence.

CASE II.—Capt. M., aged 48; height, above average; weight, 165 pounds; occupation, general insurance agent. He complained of the following symptoms: frequent desire to micturate, often accomplished with difficulty, at times amounting almost to retention; micturition painful, and accompanied by a burning, bearing-down sensation; urine high colored, and left a considerable deposit upon standing. As he left town an hour after the prescription was made there was no opportunity for a chemical or microscopical examination of the urine. He was put upon the following:

℞ Fluid ext. pichi, f℥iss;
Fluid ext. uva ursi, f℥ss;
Elix. lactopeptine, f℥ii. M.
Sig.—A teaspoonful three times a day.

His symptoms were soon relieved, and when last seen he had not suffered for a week.

CASE III.—Mrs. C., aged about 35; of small stature; general health not good. Gave birth November 2 to a male child at full term. In actual labor about four hours. The day after labor she suffered with retention of urine. The writer was unavoidably absent from town, and did not see her until late in the afternoon, when the urine was drawn off with a catheter. For several days she suffered with irritability of the bladder and a constant desire to empty the organ; and when this was accomplished the urine had the milky appearance noted in Case I., due to an excess of the earthy phosphates. She was put upon fluid ext. pichi in elixir of lactopeptine as a menstruum, with complete relief in a few days.

CASE IV.—Mr. A., aged 37; weight, 180 pounds; general appearance good; complained of the following symptoms: pain in lumbar region of the back; vesical tenesmus; frequent desire to urinate, having to get up at night to empty the bladder; noticed brick-dust deposit in urine which had remained in a vessel for a few hours. Rectal suppositories of hyoscyamus and belladonna were ordered, and he was put upon ½-drachm doses of fluid ext. pichi in simple elixir every four hours. In the course of a week his symptoms were greatly ameliorated, and now his relief is complete.

CASE V.—Mr. P., aged 27; weight, 140 pounds; height, 5½ feet; general health good. From exposure he contracted a cold, which was followed by tonsillitis. During convalescence he complained of a weak, tired feeling, sick headache, indigestion, pain in the region of the kidneys, frequent and painful micturition,

and vesical tenesmus. A chemical and microscopical examination demonstrated the presence in large amount of the amorphous urates. He was put upon the fluid ext. pichi and cascara cordial three times a day, and instructed to drink lithia-water to the exclusion of other fluids. This was a month ago, and the symptoms have all disappeared.

The above hastily reported cases may serve to point out some of the indications for the use of pichi. If given a fair and conscientious trial it will be found to have a wide range of usefulness, being especially beneficial in cases of uric-acid diathesis, renal and vesical calculi, excess of the phosphates, and catarrhal conditions of the urinary tract. Its use seems to be contraindicated in renal disease where destruction of tissue and degenerative changes have taken place; hence it should not be given in albuminuria, in which morbid condition it is said to be not without harmful effects.

With regard to its lithontriptic action the writer is unable to express an opinion from personal observation, but, judging from reported cases, it would seem that the favorable results noted were due more to its action as an antilithic than to its action as a solvent.

In prescribing pichi in the conditions just pointed out we should not lose sight of its reputed virtue in cases of impaired digestion. Considerable importance is attached to its therapeutic effects in this class of diseases by Dr. Ramires, of Valparaiso, and Dr. Rodiquez, of Buenos Ayres, who seem to have been among the pioneers in its use. When prescribed as a stomachic tonic it should be given freely diluted, since its use would be indicated for some length of time, and if administered in a concentrated form a weak or delicate stomach might not retain it. It can be conveniently given in combination with any of the other numerous tonics. A pleasant and palatable mixture would be its combination with the syr. hypophosphites comp.

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## *RESORCIN IN CHRONIC ECZEMA.*

By M. Schmitz, M.D., Mount Calvary, Wis.

I WISH to report two cases of "chronic eczema" that were lately brought to me for medical aid, in order to illustrate or supply additional testimony to the valuable therapeutic influence of resorcin in this most intractable skin-disease. The first patient was a little child about 10 months of age. Four months before the child came under my observation it developed an insignificant eczematous patch on the scalp, and, inasmuch as the eruption manifested a tendency to spread, the mother consulted a neighboring physician as to what it was and what should be done. The doctor called it eczema, and prescribed the usual remedial measures, both externally and internally, that are supposed to abolish this disease, and gave such general directions concerning the home management of the case as he thought advisable. In spite, however, of the most skilful management for months, the eruption spread more and more until it had invaded almost every inch of the entire body. The child became anæmic, began to emaciate, the itching became so intolerable as to allow very little rest day or night for sleep or for nursing, and the mother became utterly discouraged about the painful and apparently hopeless condition of her baby; the more so because she had lost a child, as she stated, several years ago with this very identical trouble. About this time the case was brought to me in the condition above stated. Knowing that the little one had been in the hands of a thoroughly clever practitioner, and that he certainly had not left untried any of the old remedies advocated by the best medical authorities, I considered it best to experiment with some new drug. I had read about two weeks before this a favorable report in the Therapeutic Gazette of resorcin in the treatment of eczema, and concluded to give that remedy a trial. Accordingly, I prepared a solution corresponding in strength to that of Dr. H. P. Chase, as given in the November number of the Therapeutic Gazette of 1886, viz.:

℞ Resorcin, ℥ss;
Glycerin, q.s. ad ℥iv. M.

and gave directions to apply with a goose-feather twice daily over the entire body,—*i.e.*, wherever there was an eczematous eruption. After several applications the child became more quiet, undoubtedly on account of the alleviation of the intense pruritus, and within a week unmistakable signs of the beneficial effects of the application could be noticed. To make a long story short, gradually recovery set in, and, after a month's treatment, the child was clear of the eruption, although two months elapsed before restoration to its former condition of robust health.

The second case, I may state, was merely a repetition of the first. Also a child of nearly the same age as the first one, passed

through the same routine of treatment at first, and when brought to me presented the same characteristics as the case above, with the exception of being better nourished and in a fairer state of health.

In this instance I prescribed the same treatment, and, I am glad to say, with the same beneficent result. In neither case did I administer anything internally.

Now, although resorcin is a comparatively new remedy in the treatment of eczema, and although the instances are few where it has been used, and then as a rule, I think, with success, it nevertheless deserves continual trials by the medical fraternity, especially in obstinate cases where the old remedies fail; and I have no doubt it will form a valuable addition to our armamentarium for combating this disease, as well as a great blessing to the poor suffering patient.

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## *AGARICINE.*

By A. Radcliffe, M.D., Bushnell, Ill.

In the January number of the Therapeutic Gazette was an article on agaricine, which induced me to try it in a case of phthisis under my care, and, in compliance with the request in the April number, that some of its readers make a trial of agaricine and report, I send the following:

The patient had been a victim of hip-disease, and last fall her lung-trouble commenced to develop. She was much emaciated; pulse, 110 to 120; temp. 101° to 103°. In the superior lobes of both lungs were râles and tubular breathing; a cavity was forming in the left superior lobe. In the sputa I found bacilli. The family had been giving sage tea, which for a time stopped the sweating; but it was now profuse every night, and some during the day. I had reasons for not giving belladonna. The formula of Joung I reduced and changed to suit my convenience.

℞ Agaricini, .12 grammes (1⅘ gr.);
Pulv. Doveri, .1 gramme (1½ gr.);
Pulv. gummi arab., q.s.
F. pil. xxxv., divide.
S.—One just before retiring.

The pills were made not larger than fine shot; no one could object to taking so small a pill. She commenced taking them the last of January, and at my request they were stopped several times for one or two nights. The first night they were omitted there would be no sweating, or very slight; but if omitted the second night there was always some sweating. It seemed that the effect of one dose lasted two nights, but was about gone by the third. When taken every night there was no sweating, no laxative effect, nothing that we noticed but its antidiaphoretic action. She had to take a laxative once or twice a week. The first of April she was out of doors in an invalid-chair, and that night had a sweat. As she needed more pills, I increased the agaricine in the above formula to .15 gramme (2¼ gr.). Since then there have been no sweats, and only one pill taken at night.

In two other cases of night-sweats, one of which had taken all the domestic remedies and some others, two or three of the agaricine pills, taken one at night, stopped the sweats.

In the April number of the Gazette it speaks of an impure alcoholic extract sold under the name of agaricine, and gives as the dose 1 grain to 1½ grains, or even larger; if this is anything like the agaricine I have been using the dose appears altogether too large, as mine has not exceeded .006 gramme (about $\frac{1}{10}$ gr.).

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## *AGARICINE.*

By Alex. B. Pope, M.D., New York.

In reply to the request published in the Therapeutic Gazette of April 16, 1888, on the subject of agaricine, it gives me much pleasure to offer the results of my experience while on service in Bellevue Hospital, in order that those of the profession who have not used it may be induced to test what I consider one of our most useful therapeutic agents. At the suggestion of my visiting physician, Dr. George M. Tuttle, an investigation into the merits of agaricine in controlling the night-sweats of phthisis was undertaken, and with most gratifying results.

It was prescribed in doses of ⅛ of a grain at bed-time, and repeated usually twice during the night at intervals of two, three, or four hours. In the majority of cases this was sufficient to completely control the night-sweating. In other cases it was given every four hours, day and night, so that six doses of ⅛ of a grain each were taken. I re-

member but one case in which the drug was pushed beyond this limit, because of failure in doses of ⅛ of a grain every four hours, and in this instance one and a half grains were given in divided doses during the twenty-four hours, and failing again, it was discontinued because of symptoms which were believed to be due to the drug. Unfortunately, I cannot give the details of the disturbances which were attributed to it, but, if my memory is not at fault, they were gastro intestinal and nervous, the latter affecting especially the cerebrum and sensory nerves.

In several instances agaricine succeeded when belladonna or atropine failed, and without giving rise to any unpleasant symptoms whatever.

The failure of atropine in some instances was due to the fact that it was not well borne, on account of great dryness of the mouth or nervous excitement occasioned by it.

My conclusions and convictions were drawn from a series of cases, probably over one hundred, of advanced disease, such as one sees in the wards of a public institution. Most of them were treated by agaricine alone,—*i.e.*, without the administration of any other drug which could affect the symptoms under consideration.

After having used this drug in this manner for some time, and having convinced ourselves of its value, we used a combination of agaricine and aromatic sulphuric acid, in order to effect solution and get the benefit of each of these remedies.

The formula used is as follows:

℞ Agaricini, gr. x;
Acidi sulphurici aromat., ♏mcc.
Dissolve and filter.

Dose, 10 minims in syrup or simple elixir, containing ½ grain of agaricine, at night only, or every four hours.

If desirable, atropine, gr. i, may be added to the prescription above; and if this combination, pushed if necessary, does not control sweating, I know of nothing that will.

Not only is agaricine useful in the night-sweats of phthisis, but sweating from other causes, as debility after the use of antipyrin, antifebrin, or other antipyretics.

The agaricine used was the pure white agaricine of musk,—properly speaking, agaric acid.

I am much indebted to Professor Charles Rice for valuable assistance in prosecuting this study.

126 W. Forty-Fifth Street.

### *ARTERIAL AUSCULTATION.*

Apart from aneurismal bruits and the conduction of murmurs generated at the aortic orifice, the practice of auscultation of the arteries is not of much service. Yet the subject has often received attention, with comparatively little profit. Perhaps the chief difficulty towards a clear distinction of the sounds audible over the larger arteries lies in the fallacies due to the pressure produced on the vessel, and other conditions of which we are ignorant. Where, for example, is to be found a satisfactory explanation of the "subclavian murmur," at one time wrongly held to be distinctive of commencing tubercular deposit in the apex of the lung? Dr. H. Hockhaus, of the Friedrichshain Hospital, Berlin, has made a number of observations upon auscultation of the femoral artery in health and disease (*Virch. Archiv*, cxi. Hft. 3), in which he somewhat extends the conclusions arrived at by Weil in his work on auscultation of arteries and veins (Leipsic, 1875). For the results obtained by Dr. Hockhaus are thus stated: 1. Pressure murmur and pressure tone are usually perceived in normal as well as in pathological cases; it is only where there is marked atheroma that the pressure tone cannot be produced, owing to the loss of elasticity of the arterial wall. 2. A spontaneous tone is heard (*a*) always in aortic incompetence, because the diastolic expansion of the artery is notably increased by the action of the hypertrophied left ventricle; (*b*) nearly always in uncompensated mitral regurgitation, in anæmia, and in febrile diseases, because in these affections the initial tension in the arterial system is lowered, while the maximum tension (during diastolic expansion of the vessel) remains, so that a marked difference is caused between them. 3. The double tone noted by Traube was seldom observed in cases of aortic regurgitation; but a diastolic double tone, due to irregular contraction of the ventricle, was more common. 4. The diastolic and systolic murmur (double souffle of Durosiez) is heard in all well-marked cases of aortic regurgitation, often also in combined aortic incompetence and stenosis; for the former it is pathognomonic, although it has in isolated instances been met with in typhoid fever, anæmia, and atheroma. Both murmurs are due to narrowing of the vessel. 5. With the exception of aortic regurgitation, auscultation of the femoral artery is of no prognostic or diagnostic value in disease.—*Lancet*, March 24, 1888.

# The Therapeutic Gazette

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## Leading Articles.

### *POISONING WITH COCAINE.*

MOST medicines which have power for good have also power for evil, and it is not remarkable, considering the enormous frequency with which cocaine is used, that cases of poisoning by it should appear from time to time in the journals. It is, however, somewhat remarkable that there should be so few cases in which the results have been really serious. It is indeed affirmed that two fatal cases of poisoning by the alkaloid have occurred in Russia, but we have not been able to find any detailed account of these cases or trace them to their original source, and we must, therefore, for the present consider them apocryphal. The amount of cocaine which will kill is not known. According to Von Ploss, 22 grains of cocaine were swallowed by an apothecary in a glass of beer. Shortly afterwards the man went to sleep, but awoke in some hours with severe abdominal pains, dryness in the mouth, excessive restlessness, and vertigo, and suppression of urine for twenty-four hours. Much less amounts of cocaine have in not a few cases produced alarming symptoms. Dr. E. Caudwell states (*Brit. Med. Journ.*, January 3, 1885) that after taking 5 grains of cocaine he felt in a few moments so giddy and so utterly powerless that he could hardly stand. He had, also, slight superorbital headache, widely-dilated pupils, and almost complete amaurosis. The temperature fell as low as 96° and 97° F., and the pulse rose temporarily to 94; but no other marked symptoms were produced, and in two hours the unpleasant sensations had passed off, and the doctor walked four miles in something under fifty minutes. On the other hand, 5 grains of the hydrochlorate of cocaine taken by the mouth are said to have been followed in twenty minutes with cramp in the stomach, nausea, loss of sight and of the use of the legs, and incoherence of speech, followed by severe sweating and prostration, thickened and intermittent pulse, accompanied by cyanosis and sense of suffocation, consciousness being preserved (*Pharm. Journ. and Trans.*, December 25, 1886). In the *Maryland Med. Journ.*, vol. xvi. 396, Dr. Samuel T. Earl reports a case in which he injected 2 grains of cocaine into the neighborhood of some small internal hemorrhoids. In five minutes after the injection twitching of the muscles appeared. In a few minutes more these had increased to decided general tetanic convulsive movements, which involved all the muscles of the extremities and trunk. Directly afterwards the patient became unconscious, and remained so for five minutes. After that he was dull, with a weak pulse and dilated pupil. In another case the injection of 5 grains of the muriate was followed in five minutes by sudden violent general convulsions, with opisthotonos and entire loss of consciousness for about five minutes. There was also asphyxia and unevenly-dilated pupils, decidedly thickened speech, and the respiration, which was throughout very labored at the height of the poisoning, arrested for some seconds. The patient at one time seemed cyanosed. Recovery recurred after several hours. Dr. J. S. Spear reports (*N. Y. Med. Rec.*, November 14, 1885) a case in which a man took hypodermically 10 grains of cocaine in the course of five hours during the course of a drunken spree, and was found sitting on the floor with his back against a wall, with his head fallen forward; a tightly-closed mouth, half-open eyes, pupils contracted, respiration very slow, pulse feeble and fluttering and not to be counted, face of a whitish gray, lips and nose blue, the body bathed in perspiration. No amount of

shaking sufficed to bring a return of consciousness. The case was supposed to be one of opium-poisoning, and treated by hypodermic injections of sulphate of atropine, etc. In the course of an hour and a half signs of returning consciousness first appeared. Two hours afterwards he was seen, the respirations were 9 a minute and stertorous, and he could be roused with difficulty and inclined to go to sleep when let alone. Although in this case the man administered the cocaine to himself, the circumstantial confirmations of his own statements after recovery seem to prove that the man really did take, as he asserted, 10 grains of cocaine. The smallest amounts of cocaine which have produced severe symptoms, so far as our knowledge goes, are the cases recorded by Dr. Ramsden Wood in the *Australian Med. Gaz.* for August, 1886, in which 4 minims of a twenty per cent. solution—that is, less than 1 grain of cocaine—are affirmed to have caused convulsive respirations and collapse, with marked general muscular rigidity; and in that reported by Schilling, in which, after the intragingival injection of 2 drops of a twenty per cent. solution, motion and sensation entirely disappeared. Complete amaurosis and deafness were present. The patient complained of coldness and darkness. (*Medical News*, March 6, 1886.)

In a case recently seen by Dr. H. C. Wood in Philadelphia, 5 minims of a five per cent. solution of cocaine were injected by a dentist about one-half hour before the patient was seen by Dr. Wood. At that time she was conscious, without any apparent cerebral excitation, but with marked general spasms, which took the form of excessive rigidity and rapidly-repeated automatic movements resembling more or less closely voluntary actions, and especially marked in the arms and body. The pupils were moderately dilated, responding to light very sluggishly. The breathing was irregular, excessively hurried, mostly very deep and full, and somewhat resembling Cheyne-Stokes breathing, in that paroxysmally the breathing would get excessively rapid and full, and gradually die away, but never ceasing completely. The ability to swallow was almost lost, as well as the power of speech. The pulse was exceedingly rapid, and very small and feeble. At times there was distinct opisthotonos. There was also great numbness of the whole body. The symptoms were controlled readily with ether, and after some three or four hours subsided. Much more extraordinary than these cases of cocaine-poisoning are those in which violent symptoms are affirmed to have followed the local application of the drug. Dr. Whistler, of London (*Brit. Med. Journ.*, February 4, 1888), states that he has seen vertigo, nausea, faintness, as having followed the use of the four per cent. solution of sprays to the nose; and February 18, in the same journal, Dr. Fox narrates a case in which, after the use of a two per cent. spray, there were coldness and numbness of the tongue, weakness of the lower limbs, staggering, with loss of the power of articulation, and disturbances of consciousness. Dr. McSherry, of Baltimore, in a recent number of the *Medical Register*, reports a case in which spraying of the larynx with a four per cent. solution of cocaine caused numbness, marked pallor of the face and lips, violent headache, and sick stomach.

Dr. Ziem, of Dantzic, has reported a case in which, in a few minutes after the instillation of 2 drops of a four per cent. solution of cocaine in the eye of a man, the face became pale, sweat broke out on the forehead, and the breathing was embarrassed, and affirms that there have been fourteen cases recorded in which dropping cocaine into the eye had produced toxic symptoms, sometimes transiently, and consisting of pallor of the face and neck, giddiness, and sweating; in others, lasting for several days, manifested by dyspnœa, great feeling of prostration, malaise, and apathy. In one case the subjunctival injection of about 8 drops of a three and a half per cent. solution is said to have produced convulsions and loss of consciousness. (*Brit. Med. Journ.*, November 21, 1885.)

Dr. F. S. Williams (*Med. Rec.*, September 25, 1886) reports a case in which a pledget of absorbent cotton, saturated with a twenty per cent. solution of cocaine, was placed over the cervix uteri. After a time the laceration was operated upon without pain. Directly after the operation the patient said, "I feel faint," and gasped for breath; the breathing then became shallow and irregular, pulse very rapid, irregular, and weak, and at one time almost imperceptible. There was also great numbness, the symptoms lasting for about ten minutes, and partial loss of consciousness.

Dr. P. Heymann (*Deutsche Med. Wochen.*, xlvi.) narrates a case in which the application of 5 drops of a twenty per cent. solution applied to the larynx of a child 9½ years old, caused marked weakness, loss of power of walking without staggering, rise of the pulse-rate to 100 per minute, of the frequency of

respiration to 30, and of the temperature to 38.2° C.

Dr. Mayerhausen has reported (*Centralbl. für Gesammt. Ther.*, October, 1885) a case occurring in a young girl 12 years old, in which at intervals from five to eight minutes 1 or 2 drops of a two per cent. solution were dropped into the eye seven or eight times. It was estimated that about one grain and a half of the cocaine was placed in the eye. The result was nausea and vomiting, with great prostration and partial paralysis of the tongue and limbs, so that the patient for some hours was scarcely able to speak, and staggered heavily on attempting to walk. There was also great restlessness, and it was not until twenty-four hours had elapsed that the symptoms had completely disappeared.

In the use of the spray, and even in the dropping of a liquid into the eye, when the mind of the operator is on his work that is to be done, rather than on the application or the local anæsthetic, much more of the drug may be used than is known, and we cannot help suspecting that in those cases in which serious constitutional symptoms are asserted to have followed the use of small amounts of cocaine by means of atomization or instillation into the eye, larger amounts were taken than are recorded. More strange and difficult of explanation are those cases in which the local application of cocaine on a pledget of cotton was followed immediately by severe symptoms, although even under these circumstances it is possible that more of the drug was carried to the interior of the patient than has been suspected. A remarkable case is that reported by Dr. H. Clinton McSherry in *Med. Reg.*, May 5, in which a flexible rubber probe, having on the end a pledget of cotton saturated with a four per cent. cocaine solution, was passed through both nostrils over the mucous membrane of the nose. Shortly afterwards the patient's face and lips became very pale, and she said that she was going to faint. The pulse became rapid and small, and the patient in a moment fell forward in complete syncope, with the pulse gone, the respiration not perceptible, and the face covered by the pallor of death. Notwithstanding vigorous remedial procedures, the woman remained an inert body at least ten minutes, when, to her doctor's great relief, she gave a gasp for breath. During the subsequent hour the patient vomited repeatedly, and for two days she was confined to her house with a headache and sick stomach.

Is it possible that the condition of the patient described by Dr. McSherry was the result, not of the direct action of the cocaine, but of the intense irritation by it of a wide extent of sensitive peripheral nerves in the nasal mucous membrane acting reflexly in a neurotic temperament?

A curious circumstance to be noted is that in no recorded case that we have met with have the symptoms of cerebral disturbance been marked. The wild vagaries, the hallucinations, which are said to be produced in South America by the use of coca, the glorious exhilarator which leads the coqueros to death, appear never to have been repeated in any of these cases. Is it possible that, after all, cocaine is not the active principle of coca?

Since the editorial upon cocaine was in type, the London *Lancet* of May 5, 1888, has been received, and we find in it an account by Surgeon A. W. Addinsell of his own experience with cocaine. One grain of the hydrochlorate dissolved in twenty minims of water was injected into a small abscess at the root of the tooth. In three minutes the pain of the abscess ceased, and the tooth was extracted without pain. Directly afterwards Mr. Addinsell says, "I then began to feel giddy and sick. I felt my pulse; it was very rapid and weak. I had violent palpitation of the heart, with a great thumping at the chest-wall, and a slight feeling of suffocation. I then became very talkative and laughed loudly. I remember insisting upon Mr. Maitland (who had extracted the tooth) getting into his own operating-chair, and my wanting to operate; this was politely but firmly declined. I now felt very sick, and tingled all over. I staggered about the room, was very pale, and my pupils were widely dilated. I was perfectly conscious, however. I remained in this condition for thirty-five minutes, when the pain in the gum began gradually to return, my pulse improved, and in an hour after the injection I returned home."

In a case of a lady who also was suffering from a periodontic abscess, Mr. Addinsell injected 1 grain. In two minutes the patient began to laugh and walk about the room excitedly. Suddenly she fell into a chair, and cried out, "Oh, my legs; they feel so strange!" She became very pallid, with exceedingly feeble, rapid pulse, and complained of tingling all over, and burning pain at the stomach. Her eyes were staring and dazed-looking, pupils dilated, and cold perspiration suffused her ashy-pale face. Under the influence of

brandy, hot external applications, etc., she revived somewhat, vomited, and in one hour from the time of injection fell into a quiet sleep.

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### *MISTAKES IN DIAGNOSIS FROM THE ELIMINATION OF MEDICINAL PRINCIPLES.*

IN a letter to one of the editors of the THERAPEUTIC GAZETTE, Prof. W. W. Jaggard, of Chicago, stated that he had recently seen several cases of serious error in diagnosis growing out of the reactions produced by chemical reagents upon the urine of patients taking salicylates, and the subject seems to us worthy of a brief editorial notice. Many years ago we astonished a party of hospital residents and set them to puzzling their wits for many days in endeavoring to discover what disease a certain man was suffering from whose urine became intensely black upon the addition of chlorine of iron. It is hardly necessary to state to our readers that the urinary changes were dependent upon the presence in it of gallic acid, which medicine the patient was freely taking. As was many years ago pointed out by Dr. Bernatzik, when either copaiba or cubebs are administered, some substance is eliminated as the result of the oxidation of their active principles which is soluble in ordinary urine, but is precipitated by nitric acid in the form of flakes resembling somewhat the particles of coagulated albumen. Such urine is to be at once distinguished from true albuminous urine by the fact that no coagulation occurs upon boiling. When salicylic acid is taken freely it also escapes in part in the form of an alkaline salicylate, or more probably salicylurate, which is decomposed on the addition of nitric acid; the liberated salicylic or salicyluric acid, being only slightly soluble in water, is precipitated in a flocculent form. Salicylic acid urine, like those previously mentioned, does not precipitate upon boiling. It is possible that the reports made by certain clinicians, that salicylic acid is in susceptible persons sufficiently irritant to produce albuminuria, may rest upon mistaken observation, but it is hardly probable that such mistake has always been made, because Sée reports instances in which large doses of salicylic acid produced hæmaturia. The matter is one of great importance, and would well bear re-investigation, not only on account of the use of salicylic acid in disease, but also in its relation to the use of the acid as a preservative of food. Our readers will probably remember such use of salicylic acid was not long ago studied by a French Governmental Commission and condemned, largely on the ground that salicylic acid is so irritant to the kidneys, especially to the kidneys of aged persons, that its habitual ingestion even in small doses would injure health.

There is little doubt that occasionally mistakes in the diagnosis of diabetes have been made on account of the reducing power of various drug educts taken by patients. In 1883 Professor Quincke called attention to the fact that copaiba-red, a colorless acid which is produced in the body out of the oil of copaiba, has the property of reducing the oxide of copper like glucose. Even copaiba resin, although incapable of giving rise to the copaiba-red, furnishes an educt which responds to Trommer's test for sugar. It is probable, although not proven, that the oil of cubebs and some other volatile oils may share the deceptive powers of copaiba. Feltz and Riter some years since announced to the French Academy that sugar is present in urine of chloralized animals, but it was soon found that this urine would not respond to the fermentative test for sugar, and Von Mering and Musculus subsequently succeeded in isolating the so-called uro-chloralic acid, and proving that it gives the sugar reaction with Trommer's test.

A practical deduction from the facts just mentioned is that the physician should, in examining urine, never be satisfied with a single test. The albuminous urine should be made to respond both to nitric and picric acid and to heat, while the alleged diabetic urine in which Trommer's test apparently reveals the presence of sugar should be made to respond to the crucial experiment of fermentation.

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### *SULPHONAL—A NEW HYPNOTIC.*

THE latest addition to our materia medica suggested from the chemical laboratory has received the name of sulphonal by Baumann, its discoverer, and has been claimed by Professor Kast, of Freiburg, to be possessed of marked hypnotic properties. Sulphonal is one of a class of compounds that have been worked out by Baumann (*Berichte*, xviii. 47, 883; xix. 2803, *et seq.*). Its constitution and method of production have been described in a paper by Fischer (*Pharm. Zeit.*,

April 21, p. 285), which may be epitomized as follows (*Pharm. Journ. and Trans.*, April 28, 1888): It is known that when absolute alcohol and aldehyde are brought together under conditions that lead to the elimination of the elements of water, condensation takes place and acetal is formed, but up to the present the hypothetical corresponding compound that should be formed when a ketone, such as acetone, is substituted for the aldehyde, has not been obtained. It has been ascertained, however, that if, instead of alcohol, a mercaptan is used,—that is, a thio-alcohol in which the group HO is replaced by SH (*e.g.*, $C_2H_5SH$),—a definite condensation compound is obtainable either with aldehyde or with acetone. It is the formation of such a ketone compound that constitutes the first stage in the preparation of sulphonal, and this is effected by passing dry hydrochloric gas through a mixture of mercaptan and acetone, in the proportion of two molecular weights of the former to one of the latter. The reaction is represented by the equation:

$$\begin{matrix} CH_3 \\ CH_3 \end{matrix}\!\!>\!C=\boxed{O+\begin{matrix} H \\ H \end{matrix}}\begin{matrix} SC_2H_5 \\ SC_2H_5 \end{matrix}=$$

Mercaptan.

$$\begin{matrix} CH_3 \\ CH_3 \end{matrix}\!\!>\!C<\begin{matrix} SC_2H_5 \\ SC_2H_5 \end{matrix}+H_2O$$

Mercaptol, or
Dithioethyl-dimethyl-methane.

This product, which is a liquid insoluble in water and boiling at 190° to 191° C., is now oxidized by means of permanganate solution, which converts the S in the mercaptan nucleus into $SO_2$. The result is diethylsulphon-dimethyl-methane, or sulphonal, which, after heating the liquor upon a water-bath and filtering while hot, separates upon cooling, and is purified by a simple recrystallization from hot water or alcohol. The composition of sulphonal may, therefore, be represented as methane, in which the four hydrogen atoms have been replaced by two methyl groups and two ethyl-sulphon groups.

$$\begin{matrix} CH_3 \\ CH_3 \end{matrix}\!\!>\!C<\begin{matrix} SO_2CH_3 \\ SO_2CH_3 \end{matrix}$$

Sulphonal crystallizes in large colorless tables, and is perfectly devoid of odor and taste. It melts at 130° to 131° C., and boils at about 300°, almost without decomposition. It dissolves in eighteen to twenty parts of boiling water, but requires one hundred parts of water at the ordinary temperature. It is readily soluble in alcohol or alcoholic ether. It is not affected by acids or alkalies, or by oxidizing agents either hot or cold. Thus, concentrated sulphuric acid scarcely attacks it, and it resists fuming nitric acid, chlorine, and bromine. It is, therefore, an extremely stable body. From the experiments of Kast (*Berliner Klin. Wochen.*, April 16, 1888) it would appear that doses of from 45 to 60 grains may be taken by healthy adults without the least discomfort or disagreeable after-effect other than considerable sleepiness. Given to dogs, in doses of 30 grains, it produced want of co-ordination in the movements of the extremities, and finally provoked sleep. After awaking from the sleep there was still some want of co-ordination in the movements of the limbs, but this soon passed off, and the animals then were in their previous normal condition. Examination of the effects of sulphonal on the blood-pressure by Professor Von Kries established the fact that in dogs, even after very large doses, the blood-pressure was not lowered, while poisonous doses caused severe convulsions, passing into heavy sleep, deepening into coma, and ending in death in about ten hours. The drug has been given medicinally to sixty patients, and three hundred observations of its effects were made, the results being that almost without exception the patients passed into a tranquil sleep, lasting from five to eight hours, and awoke feeling perfectly comfortable. No disturbance of digestion, pulse, or temperature was noticed, and no want of co-ordination in the limbs, which was so evident in the case of dogs, appeared after the administration of this substance to men. The ordinary dose given was about ½ drachm, although in women 15 grains, or in man 45, may produce the characteristic effect. It has been found to be most conveniently administered in the form of powder enclosed in wafer.

The testimony as to the value of this new hypnotic is as yet scarcely complete enough to establish its position. The indications are that we will have in this substance a remedy which will be quite as valuable as amylene hydrate, since it has been given even in cases of cardiac valvular disease without disagreeable effect, and is especially efficacious in cases of sleeplessness in nervous subjects. Dr. Nevinny has commenced a paper on the subject of this remedy in the *Zeitschrift des Allgem. Oesterreich Apotheker Vereines* for April 20, 1888. In our next issue we hope to lay before our readers the results of his experiments, with whatever further facts have been collected on this subject.

## Reports on Therapeutic Progress.

### *A NOVEL EXTENSION OF THE USE OF COCAINE.*

The use of cocaine has been hitherto restricted to the production of local anæsthesia. Its anæsthetic property is too well known and appreciated to require here even a passing reference. Mr. E. Hurry Fenwick, in the *Lancet*, May 5, 1888, claims to have discovered an entirely novel use of this drug. His first idea on this subject was due to an accident. Soon after the introduction of the alkaloid a gentleman came to him from Servia, complaining of constant pain in his face, limbs, and urethra. The urethral pain had existed for five years, and was consequent upon an attack of gonorrhœa.

The patient was a well-built, athletic man of 40. He had had several severe attacks of malaria. His knee-jerks were excessive, and his pupils unequal. He had a frequent desire to vomit, and complained of pins-and-needles sensations in his limbs, which he described as "feeling like small grains of glass fixed in his muscles." He had lost all sexual power. There was no swaying gait and no residual urine. Believing that his nervous system was thoroughly demoralized by malaria, and that under these circumstances a urethral granulation might have induced and augmented the continual neuralgia he was suffering from, Mr. Fenwick proceeded to pass an endoscope and examine his urethra. Before doing so he applied, in the ordinary routine fashion, a few drops of a twenty per cent. solution of cocaine to the canal. In about sixty seconds he exclaimed that the neuralgia in his face and limbs was leaving him, and in one hundred and twenty seconds he was completely free from pain.

The question that thus arose was this: Are we able to reduce pain in any part of the body by means of a topical application of cocaine to an absorbent mucous membrane like the urethra? To obtain a perfectly unbiased answer, Mr. Fenwick examined the effects of cocaine upon a large series of decapitated frogs, taking them in spring, summer, autumn, and winter; for, as is well known, their reflex excitabilities vary according to the period of the year. The frogs were decapitated, and their toes dipped into a standard solution of sulphuric acid (2 in 1000, Türck). The length of time elapsing before the leg was twitched out of the fluid, and protective movements were made, was noted. Usually this reflex excitability is manifested in .008 to .015 second. A few drops of a twenty per cent. solution of cocaine were now gently thrown into the cloaca so as to inject the bladder and rectum, and the leg was again dipped in the standard solution. The reflex excitability was found to be greatly diminished. Thus the leg was not withdrawn until after twenty, thirty, sixty, or even more seconds. After many control experiments the author concluded that cocaine was possessed of considerable reflex inhibitory powers. The author now worked with stronger acid solutions, and found that cocaine exerted less and less inhibitory control as the strength of the acid solution was increased,—*i.e.*, as the stimulus increased. Thus, the leg was almost *immediately* twitched out of a one per cent. solution of sulphuric acid, although a vesico-rectal injection of a twenty per cent. solution of cocaine had been administered. With stronger solutions it was evident that cocaine could not prevent the consciousness of the spinal cord nor repress the manifestation of reflex excitability. His conclusions and indications for clinical research were, therefore, as follows: 1. The application of cocaine temporarily abolishes the consciousness of *weak* stimuli, such as would correspond to slight nerve irritations, neuralgias, etc. 2. The application of cocaine has no power whatever over stronger stimuli, such as would correspond to the pain of carcinoma, inflammation, etc.

Applying these results to clinical practice, Mr. Fenwick found in a number of cases, which he reports, that if pain in any part of the body is due to slight nerve-irritation of an unimportant character a cocaine injection into the urethra will rapidly relieve it. If, on the contrary, it is due to a severe irritation, the cocaine injection will not relieve it. These facts open up a large field in the differential diagnosis of the cause of pain, as well as upon the amount of pain experienced by neurotics and others. It thus would seem to be of value in aiding diagnosis, and with this object in view Mr. Fenwick has employed it as an aid to diagnosis of various urinary diseases; for instance, in cases of renal pain, if a urethral injection of a twenty per cent. solution of cocaine immediately relieves a pain in the kidneys, Mr. Fenwick at once diagnosticates a transient or unimportant cause for that pain, such as congestion, uratic urine, or "grit," pressure upon the colon, etc. If, however, the renal pain is intense after such injection, he gives a more guarded

prognosis, and this he claims has been many times verified by the subsequent passing of a small stone, or, as in one case, by the development of renal carcinoma; and there are also various vesico-urethral diseases in which cocaine thus used proved of diagnostic value, as in glans pain, urethral pain, suprapubic pain, etc. Lastly, there would seem to be every reason to believe that it would prove of value as a prophylactic agent in warding off by inhibition the untoward effects of reflex renal flooding after operations upon the bladder and urethra.

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*THE PHYSIOLOGICAL ACTIONS OF ACONITUM FISCHERI.*

In the *Weekly Med. Rev.* for April 14 and 21, 1888, DR. ALFRED E. BRADLEY publishes an elaborate paper as to the physiological actions of *Aconitum Fischeri*, from which he draws the following conclusions:

1. That it is a rapidly-acting poison.
2. It kills by failure of respiration.
3. In sufficient doses it is a depressing systemic emetic; it has the effect of producing the aconite tingling.
4. It has little or no effect on the motor nerves; if any action at all, only slight impairment of conductivity.
5. By systemic action it has no effect on the energy, contractility, or irritability of muscular tissue.
6. That in its systemic action it is a paralyzer of the sensory nerves.
7. It first paralyzes the sensory nerve-ends, next the nerve-trunk, and finally the spinal sensory ganglia.
8. Its action on the sensory nerves precedes its action on the motor.
9. When brought directly in contact with the sensory nerve-ends it destroys or paralyzes for a time at least the functions of those parts.
10. Its action on the posterior extremities always precedes its action on the anterior.
11. That it has no effect on Setschenow's inhibitory centre.
12. That it lessens, finally abolishes, spinal reflex excitability by its action on the sensory apparatus.
13. The motor portions of the cord are but little or not at all concerned in the abolition of reflex excitability.
14. That it is a heart poison.
15. After a preliminary slowing the action of the heart is rendered irregular, rapid, and feeble in both warm- and cold-blooded animals.
16. The slowing is probably due to stimulation of the cardiac inhibitory ganglion; the final action is due to paralysis or removal of inhibition, probably caused by paralysis of the above-mentioned ganglion.

As the cardiac muscular fibres will not respond to faradic stimulation, a possible action of these tissues may be a factor in the effects produced on the heart.

17. The heart finally stops in diastole, due to over-stimulation and failure of its motor ganglia.
18. That it causes a fall in blood-pressure preceded by a very slight rise.
19. This fall is secondary, and due to its action on the heart.
20. The slight rise is due to the momentary, preliminary, stimulation of the heart.
21. That it has no effect on the vaso-motor centre or system.
22. That its action on the respiratory centre causes death by failure of respiration.
23. That it has no effect on the organs of reproduction, and is not an abortifacient.
24. That, in its systemic action, it always causes dilatation of the pupil.
25. Locally, it has no effect on the pupil.
26. That in many respects it has actions identical with *Aconitum napellus*.

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*STROPHANTHUS AS AN ANTIPYRETIC.*

DR. A. ROVIGHI, of Bologna, in experimenting on the effect of tincture of strophanthus (prepared according to Professor Fraser's directions) in cases of cardiac disease, came to the conclusion that it was much inferior to digitalis and caffeine in its power of regulating disordered action of the heart, relieving dyspnœa, and increasing the excretion of urine. He was, however, struck by the way in which it seemed to lower the temperature, and he, therefore, tried it in various febrile affections with very satisfactory results. Thus, in four cases of pulmonary phthisis, in which for months there had been considerable pyrexia, and in which other antipyretic remedies were useless or were badly borne by the patient, tincture of strophanthus, in doses of from 4 to 6 minims every six hours, reduced the temperature by two or three degrees. In a lad suffering from tubercular disease of the intestine with peritonitis, with a temperature of from 40° to 40.5° C., 3 minims of the strophanthus tincture every six hours brought the temperature down to 37.5° in the course of twelve hours, and, as long as the remedy was continued, the temperature never rose beyond

37.8° C. In a patient with tubercular disease of the left hip, a pyrexial temperature of 39.7° C. fell to 37.2° after the administration of fifteen minims (5 every six hours) of tincture of strophanthus. In a case of typhoid fever in the second week, 4 to 6 drops every six hours lowered the temperature by two degrees. In all these cases the drug eased headache, lessened the quickness of the pulse, and produced a feeling of comfort in the patient, and did not in any instance give rise to symptoms of collapse, nor to disturbance of the gastro-intestinal canal, nor profuse sweating. Dr. Rovighi states that these clinical observations were confirmed by experiments on rabbits, in which tincture of strophanthus in doses of 10 or 12 minims lowered both the general and the local temperature to a very marked degree. On the other hand, DR. V. MARTINI, of the University of Siena, has (*Sul Valore Antipiretico dello Strofanto*, Siena, 1888) tested the alleged antipyretic properties of strophanthus with absolutely negative results. He used a tincture prepared by Merck, of Darmstadt, of the same degree of concentration as Fraser's, and also one made according to Professor Fraser's latest formula. He tried it in cases of phthisis, tubercular peritonitis, broncho-pneumonia, acute rheumatism, erysipelas of the face, acute purulent cystitis, and hysterical pyrexia. From ten to fifty drops were given daily in three, four, or more doses at regular intervals. The thermometric readings were carefully noted every three hours for three or four days before and after each experiment, as well as during the course of it; in some cases the temperature was taken every hour while the drug was being administered. In the majority of cases no effect whatever on the temperature was observed; in a very few instances there was a slight fall, extending only to some fractions of a degree, which was followed almost immediately by a return to the former level. Dr. Martini concludes that strophanthus has not the slightest value as an antipyretic.—*Brit. Med. Journ.*, April 7, 1888.

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### *PHOTOXYLON.*

We have several times referred to this substance as recommended by Professor Wahl as a substitute for collodion in surgical operations. There seems to be considerable demand created for this substance, and considerable uncertainty as to the exact manner of its manufacture. MR. GEORGE M. BERINGER reports in the *Amer. Journ. of Pharm.* for May, 1888, some experiments which he has made as to its manufacture. It is made by nitrating wood-pulp, and Mr. Beringer experimented with the wood-pulp both in the loose fibrous form and in the shape of sheets rolled under reduced pressure, so as to leave the resulting sheets thick and porous. These samples of wood-pulp were carefully dried. Several processes of nitrating were tried with mixtures of nitric and sulphuric acids, and also with potassium nitrate and sulphuric acid. The following process, a modification of a formula used for collodion cotton, gave good results, and was adopted:

℞ Nitrous acid, 43° Baumé, 3½ lb. av.;
Sulphuric acid, 4½ lb. av.;
Potassium nitrate, granular, 8 oz. av.;
Wood-pulp, 4 oz. av.

The nitrous and sulphuric acids are mixed in an earthenware crock and allowed to stand until the temperature has fallen to 90° F., when the potassium nitrate is added and thoroughly incorporated with the acid mixture; the wood-pulp is then immediately immersed in the mixture, and allowed to remain for twelve hours. It is then removed from the acid and thoroughly washed. A few drops of ammonia-water added to the wash-water greatly facilitates the thorough washing and removal of the acid.

The nitro-cellulose thus prepared leaves little or no residue on burning, and is entirely soluble in a mixture of fifty per cent. concentrated ether and fifty per cent. alcohol. Although Professor Wahl recommends five per cent., Mr. Beringer finds that three per cent. of this photoxylon is sufficient to make a very thick fluid, which on application leaves a very tough film. The addition of five drops of castor oil to the fluidounce is sufficient to render it flexible. The advantage which photoxylon possesses over collodion is the additional strength of the film.

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### *THE TREATMENT OF CHRONIC HEART-DISEASE.*

At the recent German Medical Congress held at Wiesbaden, under the presidency of Professor Leube, one of the subjects discussed was the treatment of cases of chronic cardiac disease (*Lancet*, May 5, 1888).

The subject was introduced by PROFESSOR OERTEL, of Munich, who restated the principles of diet and exercise, of which he is a well-known advocate. Hypertrophy, he pointed out, is an absolute or relative increase of the

muscular substance, usually secondary; and its opposite, atrophy, produces thinning of the wall and dilatation. These are quantitative changes. The qualitative lesions, which likewise may be partial or general, are those due to inflammatory or degenerative processes. The more uncomplicated the case, the more amenable to treatment are these muscular affections. Historical retrospect shows how many changes have taken place in cardiac therapeutics. Valsalva used to keep his cases of hypertrophy in bed, place them on low diet, and frequently bleed them. Later, it was the practice to restrict diet, but to allow a limited amount of exercise. Wunderlich laid great stress upon the balance between the volume of blood and the force of the heart, and he sought to attain this by venesection. Stokes allowed regulated foot-exercise, and gave lean meat; and to old subjects with degenerative lesions some alcohol. It was in 1875 that Professor Oertel first applied dietetic and mechanical principles to the treatment of cardiac cases. He described three varieties of "fatty heart,"—viz., those cases in which, with general corpulence, there is commencing weakness of the heart; those where "serous plethora" is combined with corpulence; and those in which a diminution of fat and albumen is accompanied by a notable loss of strength. All such cases require dietetic measures. The mechanical treatment consists in hill-climbing, which in health excites hypertrophy. Long-continued climbing produces permanent dilatation of arteries and increases the power of the cardiac contractions. Gymnastics have been advocated by Schott as improving the cardiac muscle. It is also important to diminish the tendency to stasis; and this, again, is favored by climbing, which increases the power of the heart and the number of respirations. To diminish the work of the heart, as urged by Wunderlich, the chief measures consist in reducing the quantity of fluid ingested, and increasing the excretion of fluid. The latter is also affected by mountaineering. In cases of arterial disease this mechanical treatment must be employed but cautiously; and, indeed, all cases should be carefully watched. Reports from mountain health-resorts recount favorable results in cases of extensive fatty degeneration, with decided decrease of dropsy and corpulence; while in cases of valvular disease, compensatory hypertrophy, with relief to cyanosis, dyspnœa, etc., mostly follows this treatment.

Dr. Lichtheim, of Berne, followed, with a warning against the indiscriminate adoption by patients of the Oertel cure. He said that analysis had shown that in cardiac dropsy comparatively little change in the concentration of the blood is effected by removing fluid. Mountaineering was only favorable in such cases where the heart is able to deal with the more rapidly circulating blood; for the chief danger (indeed, the essential disease of the heart) lies in dilatation. All hypertrophy, whether from work, excessive ingestion, etc., is preceded by dilatation, and dilatation is increased by the Oertel cure. According to Oertel, a mountain life leads to arterial dilatation, and the danger would be diminished by lowering of blood-pressure. The supervention of dyspnœa in such cases should be taken as a danger signal. He also criticised the restriction of fluids in all cases, and concluded that the treatment by exercise should be described in cases where compensation had long existed, and that drug treatment should not be commenced so long as compensation was present. When compensation failed, then resort might be had to digitalis, strophanthus, or caffeine.

Professor Ziemssen warned against the thoughtless use of Oertel's methods, the dangers of which were also alluded to by Dr. Schott, who advocates salt-baths and gymnastics.

Dr. Edelfsen commended the prescription of iron and camphor in cardiac cases.

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### *THE RADICAL CURE OF HERNIA.*

At the French Surgical Congress M. Socin, of Basle, according to the special correspondent of the *Medical Press*, April 4, 1888, took up the subject of the radical cure of hernia. Up to the beginning of last year he performed seventy-five times the surgical operation for the definite cure of hernia in its uncomplicated condition, and eighty-five times when it was strangulated, consequently he had operated in all one hundred and sixty times, and of this number one hundred and sixteen were for inguinal hernia, the remainder crural. In the first class (seventy-five) there were two deaths, and in the second (eighty-five) eleven. A return occurred in thirty-eight per cent. of the total number operated on, consequently M. Socin considered that the operation was a *bona fide* one, and ought to be resorted to at least in every kelotomy for strangulation, except of course in those cases where the intestine should not be returned into the abdomen,

as the danger is in no wise increased by opening the sac, removing all the parts contiguous to the intestine, and by the ligature of the wound in the peritoneum, so as to close it hermetically. On the contrary, the patient has a much better chance of recovery, especially when antiseptics are properly used on the intestine before its reduction. He would also recommend the radical cure in persons of either sex under twenty on whom the ordinary truss proved insufficient in the retention of the rupture. Inguinal hernia is an affection of the young, and is frequent in children under five. It is due almost always to some anomaly of the canal, consequently all herniæ under twenty-five should be considered as congenital. The treatment, it was evident, should be addressed to the cause of the evil; the sac is open, and must be closed. He succeeded in sixty-two per cent. of his operations, but he found that the chances of success were greater where the patient was young and the hernia recent. In cases of double rupture the operation was sometimes uncertain and unsatisfactory. As to the after-treatment, it was quite simple, and he never advised a bandage to be worn, as he considered it not only unnecessary, but often hurtful.

M. LÉONTÉ, of Bucharest, said that he had operated on seven cases, and all succeeded. He also abandoned the bandage in the after-treatment.

M. THIRIAR, of Brussels, said that, having paid a visit to the clinic of M. Socin, he commenced to operate for the radical cure about two years ago. Since then he had operated twenty-six times, and had only one death, and although he did not succeed in all the cases, yet he was fully satisfied with the result. In future he will always operate when he meets with the following conditions: Irreducible hernia; congenital hernia; incoercible hernia; painful hernia; and finally, when the rupture is exposed to strangulation from the occupation of the subject.

M. MOLLIÈRE, of Lyons, said that there was no difficulty whatsoever in the operation. If the hernial tumor be isolated the dissection of the sac is easy, and when opened and neck enlarged the suture with antiseptic ligature is all that is required.

M. ROUTIER, of Paris, said he had operated fourteen times with total ablation of the sac and ligature of its base.

M. TRELAT said he could not accept the expression "radical cure," as it was not concise enough. The cure was not the cure of hernia, but of the complications of hernia. A hernia easily maintained does not need interference; it was only when the impossibility of reduction obtained that the operation was justifiable, for it was not so simple as was supposed. However, it was rational, and often succeeded.

M. BŒCKEL, of Strasbourg, said he was not encouraged in his operations, although he only lost two patients out of twelve, and of the remainder, eight were permanently cured. At the same time he considered the operation very opportune when practised under satisfactory conditions.

M. SEGOND, of Paris, thought that the operation was certainly benign, but that the necessity of wearing a slight bandage was imperious. As to its indications, he agreed with the opinion expressed by his colleague, M. Trelat.

M. LUCAS CHAMPONNIÈRE said that he succeeded in eighty operations; consequently he considered the operation as benign. Its indications were not so limited as M. Trelat would lead them to believe. The hernia of young children was most favorable to the operation, as well as those in adults when at their *début*, whereas in those large herniæ of the aged, death often took place from pulmonary congestion or renal complications.

M. RICHELOT said that he would divide herniæ into three groups, simple hernia, complicated hernia, and hernia of the aged or cachectic. In the first group the operation was always indicated when the patient desired it, as a radical cure was the rule; in the second the operation was still without danger, but the result was often less satisfactory; whereas in the aged it was better to abstain from any intervention.

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### *THE CHEMICAL INCOMPATIBILITY OF ANTISEPTIC AGENTS.*

The necessity of employing antiseptic agents in solution of definite strength is conceded by all, for if the solution be too attenuated the object in view will fail in its accomplishment, and, if too concentrated, considerable damage will in many cases be wrought, not only locally on the tissues to which the application is made, but also on the body generally as the result of absorption. The border-land between safety and success is, in many instances, a very narrow one. The possibility of reducing the strength of the solution, or of altering its nature through the chemical incompatibility of the materials employed, has hitherto received but little attention. The important practical bearing

which this may exert on their efficiency as antiseptics is sufficient apology for drawing attention to the matter.

By way of example, Dr. Robert Bloxam (*British Medical Journal*, April 28, 1888) has selected five of the more important antiseptic agents in general use, and, for ready reference as to the incompatibilities of each, the results of the experiments are presented in a tabular form, showing the action not only of these agents on one another, but also of certain lubricants with which they are frequently combined and brought into contact, and of soap, with which they are apt to be contaminated in the process of washing and disinfecting the hands and instruments.

In view of the practical utility of these observations, the experiments were made, not with concentrated materials, but with solutions of the strengths usually employed in practice, and were carried out at temperatures not exceeding that of the body.

| | 1. Sublimate. | 2. Carbolic. | 3. Iodine. | 4. Salicylic. | 5. Condy. | 6. Olive oil. | 7. Vaseline. | 8. Glycerin. | 9. Soap. |
|---|---|---|---|---|---|---|---|---|---|
| 1. Corrosive sublimate solution (perchloride of mercury) | ... | ... | 1 | ... | ... | ... | ... | ... | 2 |
| 2. Carbolic solution (phenol) | ... | ... | 3 | ... | 4 | 5 | ... | ... | ... |
| 3. Iodine solution (iodine and iodide of potassium) | 1 | 3 | ... | ... | ... | ... | ... | ... | 6 |
| 4. Salicylic solution (salicylic acid) | ... | ... | ... | ... | 7 | ... | ... | ... | 8 |
| 5. Condy's fluid (permanganate of potassium) | ... | 4 | ... | 7 | ... | 9 | ... | 10 | 11 |

The following incompatibilities were observed :

1. *Corrosive Sublimate and Iodine.*—No precipitate of mercuric iodide is at any stage of the admixture formed. A small addition of sublimate solution fixes the free iodine, as may be seen by the immediate bleaching of the iodine solution, and confirmed by the subsequent addition of starch paste, which produces no blue coloration. One part by volume of sublimate solution (1 in 1000) is just sufficient to fix the whole of the free iodine in four parts by volume of iodine solution (tr. iod., B.P., ʒi in Oi). N.B.—This forms a rough-and-ready test for the strength of sublimate solutions.

2. *Corrosive Sublimate and Soap.*—An insoluble soap is produced, even when a neutral soap solution is used. This is of special importance in consideration of the small admixture with soap which is required to throw down the whole of the mercury from solutions of the strength usually employed.

3. *Carbolic and Iodine.*—An exceedingly small admixture with phenol is sufficient to fix the whole of the free iodine (as in 1). One part by volume of carbolic solution (1 in 20) removes the whole of the free iodine from two thousand parts by volume of iodine solution of the strength indicated above.

4. *Carbolic and Condy.*—This is perhaps the most generally recognized of these incompatibilities. Admixture with phenol immediately turns permanganate brown.

5. *Carbolic and Olive Oil.*—This is of importance and of special interest when taken in conjunction with the researches of Koch, of Berlin, who has shown that bacillus spores are capable of living and developing after having been immersed in carbolized oil (1 in 20) for four months. The oil appears to enter into some combination with and to fix the phenol. If a drop of tr. ferri perchlor. (B.P.) be shaken up in a test-tube with carbolized oil (1 in 20) no change is found to have been produced in the iron as it gravitates to the bottom. Moreover, if carbolized oil be shaken up with a few drops of water, the water allowed to separate out at the bottom of the tube, and a drop of iron solution conveyed into it, the characteristic purple coloration with phenol is not produced unless the shaking has been very prolonged and energetic, and then only to a slight degree. By strongly heating the carbolized oil, phenol is again set free, and the above reaction can then be obtained.

6. *Iodine and Soap.*—No action is produced by a neutral soap solution, but ordinary soap, which contains an excess of alkali, at once removes the free iodine.

7. *Salicylic Acid and Condy.*—A very dilute salicylic acid solution (1 in 800) slowly removes the color from permanganate.

8. *Salicylic Acid and Soap.*—A drop of dilute salicylic acid solution gives a white precipitate even when a neutral soap solution is employed.

9. *Condy and Olive Oil.*—When permanganate solution is shaken up with olive oil its violet color is changed to brown.

10. *Condy and Glycerin.*—When permanganate solution is added to glycerin its color slowly changes.

11. *Condy and Soap.*—This incompatibility is also generally recognized. Soap, even when a neutral solution is employed, readily turns permanganate brown.

It is possible that some of the bodies produced may possess powerful antiseptic properties. But until this point is settled by direct observation, when chemical incompatibility exists, the antiseptic properties of the original

solution must be regarded as weakened, if not wholly destroyed.

The moral conveyed by the above experiments is obvious: avoid as far as possible the admixture of antiseptic agents and their contamination with lubricants and with soap when incompatibility exists. For instance, in employing corrosive sublimate it is advisable to use the same solution for disinfecting the hands (carefully avoiding contamination with soap) and for cleansing instruments as for irrigating the parts, to employ a mercurialized lubricant and to use alembroth dressings. If for any reason it becomes requisite to substitute one antiseptic agent for another, a second should be chosen which is not incompatible with the first; and the same precautions should be observed throughout the series.

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### *PHYSIOLOGICAL ACTION OF SANTONIN AND ITS DERIVATIVES.*

One per cent. solutions of santonin, of photosantonin, and of isophotosantonin in olive oil at 38° do not kill the ascarides lumbricoidi of the pig. While, however, the two first-named substances increase the movements of the animal and cause convulsions, with isophotosantonin the reverse is the case. The other santonin derivatives examined resemble the two first in their action on the worms. Mr. F. Coppola (*American Journal of Pharmacy*, May, 1888) found that doses of 1.25 grammes of santonin daily administered to the pig did not kill the worms. The action of santonin on worms resembles its action on vertebrate animals. In order to lessen the toxic effects of the drug on the animal to which it is given it is advisable to use santoninoxime (Cannizzaro, *Rend. R. Acc. Lincei*, 1885, 703), which is insoluble in water, easily soluble in oils and fats, but not in organic acids; nor is it acted on by the gastric juice. The increased activity of the worms leads to increased peristaltic action of the intestine, which thus voids them. In the urine, santoninoxime passes out slowly as santonin; it is less poisonous than santonin, but is equally efficacious in its action on the parasites.

Experiments were also performed in order to see whether the photosantonin derivatives differed in their action from that of santonin, and also to discover if any relation existed between physiological action and the power of solutions of these compounds to rotate the plane of polarized light. *Photosantonic acid*, $C_{15}H_{22}O_5$, has a narcotic action on frogs, doses of .02 to .03 gramme (about $\frac{3}{10}$ to $\frac{1}{28}$ grain) abolishing first voluntary movement, then the movements of respiration; the heart and reflexes are but little affected; doses of .04 to .06 gramme ($\frac{6}{10}$ to $\frac{9}{10}$ grain) first diminish and then abolish reflexes, and stop the heart in diastole. In vertebrate animals the action is similar, except that the reflexes are not affected. *Photosantonin*, $C_{24}H_{17}O_4$, acts in the same way, but on account of its smaller solubility the effects are not so marked. *Santonin*, $C_{15}H_{18}O_3$, itself and sodium santonate cause, as their chief symptoms, convulsions. It seems, then, that the action of light is to modify the physiological action of these compounds on the nervous system; the action on the respiratory and circulatory systems is, however, the same. *Santonic acid*, $C_{15}H_{20}O_4$, in doses of .03 gramme, causes no effect in frogs; .04 to .05 gramme produces narcosis, abolishes respiratory movements, but does not lessen reflexes. Larger doses affect the reflexes and kill the animal; if the dose is not lethal, the animal experiences clonic convulsions like those produced by santonin as the narcosis passes off. In a rabbit of one kilogramme body-weight, doses of 1 to 1.5 grammes (15 to 22 grains) applied hypodermically have no effect; 2 to 3 grammes caused sleep in one-half to one hour, and, like santonin, epileptic convulsions. There is no action on the circulation except with lethal doses, which stop the heart in diastole; atropine does not antagonize this action; this acid thus produces the effect of santonin combined with that of the photo-compounds, both narcosis and convulsions. Santonin and isosantonic acids act like photosantonic acid. Isophotosantonin, $C_{17}H_{24}O_4$, is no hypnotic, but easily causes strong convulsions. Isophotosantonic acid, $C_{15}H_{22}[\,]O_5$, acts similarly, but it is weaker. The derivatives of santonin that cause convulsions do so by their action on the medulla, not on the spinal cord. The photo-derivatives contain, like santonin, a closed naphthalene nucleus, and the differences in their constitution are to be found in the side-chains. There was found to be no connection between physiological action and the direction or amount of rotation of the plane of polarized light.

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### *THE TREATMENT OF CONSUMPTION BY RESIDENCE AT HIGH ALTITUDES.*

At a recent meeting of the Royal Medical and Chirurgical Society, Dr. C. Theodore

WILLIAMS read a paper on the results of the treatment of pulmonary consumption by residence at high altitudes, as exemplified by an analysis of one hundred and forty-one cases, of which the following is an abstract (*Lancet*, May 12, 1888):

The author offers a contribution from his own practice of one hundred and forty-one cases of phthisis treated in sanitaria varying in altitude from five thousand to nine thousand feet, in the Alps, the Rocky Mountains, and the South African Highlands, during the last nine years, in order to deduce certain practical rules therefrom. The one hundred and forty-one cases have been tabulated for statistical purposes under the following headings: Sex; age; length of illness before the commencement of mountain residence; hæmoptysis; history and nature of cases; state of the lungs; medicine and diet; length of residence at high altitudes. The Alpine climate is then compared with that of Colorado and the South African Highlands. The results of this treatment have been tabulated under the heads of *general*, referring to the general health, vigor, and weight; and *local*, including the conclusions arrived at from the examination of the lungs. The general results are divided into (1) cured, 41.13 per cent., where the restoration to health was complete; (2) greatly improved, 29.78 per cent.; (3) improved, 11.34 per cent.; (4) deteriorated, 17.02 per cent.; thus giving a total of 82.25 per cent. improved and 11.34 per cent. deteriorated, including 13.47 per cent. of deaths. The local results of the one hundred and forty-one cases yield improvement, greater or less, in 74.82 per cent. (including arrest in nearly forty-four per cent.), deterioration in twenty-one and one-half per cent., and a stationary condition in 3.59 per cent. Among the first stage cases there was improvement in ninety-one per cent., and arrest of disease in sixty-three per cent., with deterioration in nearly seven and one-half per cent. Cases of unilateral first stage gave ninety-two per cent. improved and seventy and one-half per cent. of arrests, and cases of bilateral affection yield 87.09 per cent. of improved and 48.38 per cent. of arrests. In the second and third stage cases there was improvement to a greater or less extent in forty-six per cent., arrest in ten per cent., and deterioration in forty-six per cent. Single cavity cases gave better results than cavity cases with the opposite lung involved, and left-lung cavities showed a less tendency to change, either for better or worse, than the right-lung ones. The following conclusions are arrived at: 1. That prolonged residence at high altitudes produces great improvement in the majority of consumptive patients, and complete arrest of the disease in a considerable proportion, such arrests being in a more or less degree permanent. 2. That in order to secure these advantages patients must be free from pyrexia and all acute symptoms, and must possess sufficient lung surface to adequately carry on the process of respiration in the rarefied atmosphere. 3. That the influence of the climate seems to promote a change in the lungs, either of a curative or destructive character, and to oppose quiescence. 4. That residence at high altitudes causes enlargement of the thorax, hypertrophy of the healthy lung-tissue, and the development of pulmonary emphysema around the tubercular lesions, and that this expansion of the chest is accompanied by diminution of the pulse and respiration rate. 5. That it is probable that the arrest of consumptive disease is partly owing to the pressure exercised on the tubercular masses by the increasing bulk of the surrounding tissue. 6. That the above local changes are accompanied by general improvement shown in the cessation of all symptoms, and the gain of weight, color, and of muscular, respiratory, and circulatory power. 7. That consumptives of both sexes benefit equally by mountain residence, but that the age of the patient exercises considerable influence on the result. 8. That the high-altitude treatment seems to be specially adapted in cases where heredity and family predisposition are present. 9. That the climate is useful in cases of hemorrhagic phthisis, and that hæmoptysis is of rare occurrence at the mountain stations. 10. That mountain climates are most effective in arresting phthisis when the disease is of recent date, but they are also beneficial in cases of longer standing. 11. That the special effects of high-altitude residence on the healthy and sick are common to all mountain ranges of elevations of five thousand feet and upwards. 12. That to insure the full advantages of high-altitude residence a period of at least six months is necessary in the majority of consumptives. In cases of long-standing and extensive lesions one or two years are often requisite to produce arrest of the disease. 13. That, in addition to the above examples, mountain climates are beneficial in (1) cases of imperfect thoracic and pulmonary development; (2) chronic pneumonia without bronchiectasis; (3) chronic pleurisy, where the

lung does not expand after removal of the fluid; (4) spasmodic asthma, without much emphysema; and (5) anæmia. 14. That they are contraindicated in the following conditions: 1. Phthisis with double cavities, with or without pyrexia; 2. Cases of phthisis where the pulmonary area at low levels hardly suffices for respiratory purposes; 3. Catarrhal phthisis; 4. Erethitic phthisis, or phthisis where there is great irritability of the nervous system; 5. Emphysema; 6. Chronic bronchitis and bronchiectasis; 7. Diseases of the heart and greater vessels; 8. Affections of the brain and spinal cord, and conditions of hypersensibility of the nervous system; and, 9. Where the patients are of advanced age, and where they are too feeble to take exercise.

Dr. Bowles discussed the pathology of sun-burning, and thought that the causes of it had some share in the improvement of phthisical patients. He argued that the reflected light from snow was a potent cause of sun-burning, far more important than heat rays or the atmosphere. The ultra-violet rays with most chemical action probably were chiefly causative of it. He found that painting the face with a brown pigment prevented sun-burning.

Dr. Hermann Weber gave a few of the results of his own statistics of one hundred and six cases treated at high altitudes. Of these, thirty-eight were cured, forty-two improved, sixteen stationary, and ten deteriorated. Of seventy in the first stage, thirty-six were cured, twenty-eight improved, eleven stationary, and six grew worse. Of thirty-two in the second stage, two were cured, thirteen improved, eleven stationary, and six deteriorated. Of four in the third stage, one was improved, one remained stationary, and two deteriorated. While granting that high altitudes did thus effect great good, Dr. Weber pointed out that equally good results might be obtained at lower levels if systematic medical and dietetic treatment were carried out, as at Falkenstein, near Frankfort. From this place, which is only about two thousand feet above the sea-level, Dettweiler's statistics (which are perfectly reliable) prove this conclusively. In Dr. Weber's cases the gain in weight was observed in fifty-eight cases: weight remained stationary in forty, and eight lost flesh. It was remarked, however, that patients could be well nourished before being sent to high altitudes, so that a gain in weight might thus be anticipated by previous treatment.

*THE USE OF PICHI IN CHRONIC CYSTITIS.*

In the *Virginia Med. Monthly*, March, 1888, Dr. Ramonn D. Garcin reports the case of a man, aged 20, in whom vesical catarrh existed as the consequence of acute gonorrhœa. The urine was alkaline in reaction, and on settling divided into two parts,—a lower, thick, turbid, gelatinous, coherent, and opaque mass, the supernatant layer being clear. There was frequent micturition, with the passage of only a small quantity of urine, and a dull, aching pain over the vesical region. The diet was restricted so far as to exclude all stimulating food and any excess of fat. Washing out the bladder, the author states, could not be resorted to, and all the various remedies, such as eucalyptus, belladonna, buchu, tincture of iron, cantharidis, copaibæ, hydrastis, etc., were used, but with signal failure. Fluid extract of pichi was then used, 20 drops three times a day for three days, and then thirty drops. Still the ergot was injected morning and night for the gleet. The urine at the end of this time was clearer, and the gleet was decidedly lessened. The pichi at the end of the week was continued in greatly increasing doses until 50 drops three times daily were reached. The urine at this time was clear and cloudless, and all treatment was stopped. The patient continued to improve, and the author states that up to this time there has been no return of the symptoms.

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*THE TREATMENT OF CHOREA WITH PHYSOSTIGMINE.*

Dr. L. Rieis writes to the *Berliner Klinische Wochenschrift*, No. 22, of forty cases of chorea which he treated with physostigmine. Thirty-four of these cases were children and young people, and were mostly new cases, where the disease had not been continuing for any great length of time. The remaining six occurred among older patients; two of them were acute and four chronic or habitual (perhaps secondary).

Among the first named four were of the severer fatal description. In such cases physostigmine proved to be as powerless as all other drugs; true, its use in these cases was only a limited one, as the course of the disease was so rapid. The four chronic cases were only improved by the use of physostigmine, but this improvement took place soon after the treatment had been begun, and was a lasting one. All the other cases were completely cured by physostigmine. Two cases,

which were specially noted, had been very severe and tedious, and were completely cured in a remarkably short time. Indeed, in most cases, the disease disappeared in four or five days.

In other affections of the nervous system accompanied by reflex or continued spasm of the muscles the drug was also tried, with the following results:

1. Tetanus, 5 cases; 2 severe (1 fatal) and 3 slight. Any exact observation of the drug's action in these cases was, of course, impossible, as in the severer form other remedies, such as chloral, curare, and baths, were also given; and in the lighter cases a recovery might have occurred without medication.

2. Tremor, 12 cases (4 senile, 4 alcoholic, 2 hysteric, 1 after typhus, and 1 as a symptom of tremor cerebri). In 8 of these cases a marked improvement was noted after two or three weeks of treatment; in 4 cases (1 senile, the post-typhoid case, and both hysterical cases) a complete cure was obtained in a very short time.

3. Paralysis agitans, 4 cases. The course of treatment in these cases lasted two weeks at a time, and in several instances frequently repeated. The drug was given by injection. In every case a marked decrease of the trembling was noticed, which lasted for several weeks after the remedy had been discontinued.

4. Multiple sclerosis, 2 cases. The treatment was attended by very great improvement.

5. Post-hemiplegical chorea or tremor, 3 cases, all remarkably well improved.

6. Athetosic convulsive movements, 2 cases, excellent results.

7. A peculiar case, hysteria accompanied by an enormous increase of all reflex motions. Other drugs had proved useless, but all unpleasant symptoms disappeared after two weeks' treatment with physostigmine.

The preparation of the drug used was the sulpho-acidulated physostigmine, as prepared by Merck. The remedy was used hypodermically, in doses of about $\frac{1}{64}$ of a grain. At first one injection only was given daily; later, two. In young children the daily dose was, at first, only $\frac{1}{100}$ of a grain.

The only unpleasant symptom observed was vomiting, which, in many cases, occurred in half an hour or an hour after the injection was given. In children and seniles a muscular restlessness was not infrequently noticed, which is ascribed to the physical excitement. In a few cases the pupil was observed to be influenced by the drug, but this only occurred after the use of large doses, and these were only resorted to in special cases. Following such doses a slight weakening of the pulse was also observed.

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### *SALOL IN DIARRHŒA.*

Dr. O. T. Osborne, in the *N. Y. Med. Rec.* for April 7, 1888, reports a number of cases of diarrhœa occurring in adults and in children, in which salol produced the most satisfactory results. To a child up to 2 years of age he gave about $\frac{3}{8}$ of a grain; from 2 to 5 years, $1\frac{3}{8}$ grains; from 5 to 12 years, 3 grains; and to all above 12 years of age he has found from 4 to 5 grains a sufficient dose. He has found it to be necessary for immediate success in every case to repeat the dose every two hours until the stools cease. The indications for salol in bowel troubles are vomiting, purging, cramps, also the summer diarrhœas in children, and he has even found it to be successful in prolonged cases of diarrhœa, and in one case of dysentery. Dr. Osborne has used it most largely in the diarrhœa and vomiting of children in every case with success, the stools becoming infrequent, assuming their natural color, and losing their offensive odor. All of his cases, except the one with dysentery, were cured without opium in any form, and with no other medication than salol. Since salol always allays vomiting, although insoluble in the gastric juice, it may be due to the antiseptic action of the salol itself.

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### *SOME EFFECTS OF SOME OF THE MORE RECENTLY INTRODUCED DRUGS.*

In the *Lancet* for May 5, 1888, Dr. Thomas Oliver publishes the results of his experience with some of the newer drugs, which we abstract, as follows:

*Jambul* was recommended a few months ago as a cure for diabetes mellitus. The powdered seed was credited with having the property of diminishing the secretion of urine and arresting the formation of sugar. Dr. Oliver has treated four diabetic cases with powdered jambul, beginning with 5-grain doses thrice daily, and gradually increasing the dose to 15 grains. Two of the patients died, both from coma; the other two are still alive, but are no longer taking the drug, and it cannot be said that any one of them received the slightest benefit. The daily amount of sugar passed out of the system was not diminished,

thirst was not in any way abated, the daily discharge of urine remained as before, and the weight of the body was not increased. In one of the cases there was a temporary reduction in the amount of sugar eliminated, but it soon reached the amount passed before the drug was commenced.

*Salol* was strongly recommended by a number of authorities as an antifebrile agent; in the hands of Dr. Oliver it has entirely failed to reduce high temperature of phthisis; nor did it, as might be expected from the nature of the ingredients of which it is composed, diminish the amount of pus secreted by inflamed surfaces, as occurs in pyelitis and cystitis. In these latter affections the drug was not at all well borne. Though discoloration of the urine may be produced by it, Dr. Oliver never met with any bad effects, such as occur in carbolic-acid poisoning. In the treatment of rheumatic fever, however, Dr. Oliver's results have been extremely favorable. Where the temperature has been high, and where even sodium salicylate has failed to reduce the temperature, and where anæmia, great depression, prevented the use of this drug, salol has been followed not only by permanent reduction of temperature and pulse, but by a feeling of comfort and sense of well-being such as patients experience when, having passed through a serious illness, they are conscious of having become convalescent. He does not find, however, that salol has perceptibly diminished the tendency to endocarditis in rheumatic fever.

*Hydrastis canadensis* has been recommended for all forms of chronic metritis, for inflammations invading the tissues around and in the walls of the uterus, for inflammations of the ovaries, and for uterine fibroids; the growth of the latter, it is maintained, being not only arrested, but in many cases have been found to undergo retrogression under the use of hydrastis. Hydrastis certainly does restrain the flow of blood in myofibromata, but in cases of menorrhagia where the loss of blood depends upon a para- or perimetritis that its efficacy is most marked. It not only relieves the ovary-pain, but checks uterine hemorrhages where there has been such evidence of inflammation outside and immediately around the uterus that intra-uterine medication could not have been attempted. The drug has in Dr. Oliver's hands had little or no effect upon uterine hemorrhage dependent upon mucous polypi. He has found, however, that it soothes ovarian pain, acute or chronic, and checks the bleedings of the latter; it checks the bleeding of endometritis, and relieves that unpleasant pain which prevents the woman thus affected from either sitting or walking; it relieves, and in many cases has arrested, the hemorrhage due to puerperal metritis and chronic peritonitis; and in many instances it has relieved the headache so frequently complained of by women who are the subjects of chronic inflammatory affections in and around the uterus and ovaries.

*Salix Nigra*, or the Pussy Willow, is reported upon by Mr. Pain in the Transactions of the Texas State Medical Association as a successful agent in the treatment of ovarian hyperæsthesia, uterine neuralgia, and spermatorrhœa. He regards it as a sexual sedative, similar to bromide, but without its depressing effects. Dr. Hutchison, of Glasgow, speaks well of the drug, and Mr. E. Hurry Fenwick found it of much service in the treatment of gonorrhœa and gleet. In Dr. Oliver's hands it has not been of any value in the treatment of spermatorrhœa, but in the treatment of ovarian pain due to pelvic peritonitis, or an associated metritis, or in the chronic ovarialgia of gonorrhœal infection relief has followed its administration in some, while in others the ovarian pain has completely disappeared. In cases of pelvic peritonitis, where there have been ovarian pain and uterine hemorrhage, the combination of hydrastis canadensis and salix nigra has been of most signal service. In the highly nervous condition into which some women are so frequently thrown soon after the climacteric period,—in whom, in short, hyperæsthesia rather than anæsthesia, excitability rather than atony, of the nervous system is present,—salix nigra and hydrastis canadensis have answered well in combination.

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### *LIGATURE OF THE THYROID ARTERIES IN GOITRE.*

According to the Vienna correspondent of the *Brit. Med. Journ.*, April 14, 1888, Professor Billroth, in the first number (April 5, 1888) of the *Wiener Klinische Wochenschrift*, the new Vienna weekly medical journal, discusses the utility of the method of ligaturing the thyroid arteries with a view of producing atrophy in goitres,—a procedure which was not long ago reintroduced into surgery by his late assistant, Professor Wölfler, of Graz. Professor Billroth first tries to answer the question why we are not content with the very satisfactory results obtained in recent years by the extirpation of goitre, and

replies: (1) because we are not able to prevent tetanus, which sometimes supervenes after these operations; (2) because it may occur, even when the greatest precautions are observed, that the recurrent nerve is cut or tied into the ligature; (3) because "cachexia strumipriva" is a not infrequent result in children when the whole of the thyroid gland is removed. Among the operations by which it was proposed to replace extirpation, the method of ligaturing the thyroid arteries deserved the greatest attention. *A priori* the following statements could be made as to the eventual success of this operation. As, after ligaturing all the four arteries, several small arteries still supplied the goitre with a certain quantity of blood, it was probable that no gangrene, but only a gradual shrinking, would take place, just in the same way as in the case of obliteration of the renal artery. The small arteries, which, in this case, derived their origin from the renal capsule, hindered the occurrence of gangrene after the obliteration of the renal artery, but they were not able to prevent atrophy supervening in the kidney. Though this analogy was very striking, the matter, nevertheless, required to be verified by experiments on animals and men, which was also done by Wölfler. The indications for this operation were, nevertheless, limited, as extravasation, calcification, cystic and colloid softening were very often met with in goitres, which, owing to the absence of any circulation in them, would, of course, undergo no change whatever after the ligature of the thyroid arteries. The question as to whether the fluid contents of cysts were capable of undergoing absorption after operation had yet to be decided. It thus became evident that the method in question would be really successful only in those cases in which no degenerative necrobiotic processes had yet taken place, such as rapidly-growing goitres in young subjects. Two points were necessary for the success of this plan: 1. The first effect after ligature of all four arteries was that of a glandular anæmia; the goitre would be smaller and softer than before operation. 2. The second effect was obliteration of the blood-vessels, and the disappearance of the epithelial and interstitial tissue, so that only cicatricial connective tissue would remain behind. Respecting the development of "cachexia strumipriva" in children after complete atrophy of the thyroid gland, Professor Billroth considers that no positive statement could be made on this subject, but that it was possible that such a condition would not supervene, as the atrophic process in such a case took some weeks or months to become complete, and the organism had thus sufficient time to get accustomed to the absence of the thyroid gland. As to whether it was probable that the atrophy would be permanent, Professor Billroth holds that, when all four arteries are ligatured, there could be no doubt about this, but that, when circulation still existed in one of the chief arteries, or became established again by the "vasa vasorum," such a permanent atrophy would never occur. This had already been confirmed by experience. Discussing the details of the operation, Professor Billroth states that, in his opinion, the incision on the outer margin of the sterno-mastoid muscle was the most convenient one for ligaturing the inferior thyroid artery; he wished, however, to lay stress on a point which had not yet been mentioned,—namely, the extreme thinness and fragility of the inferior thyroid artery. It had occurred to him on three different occasions that this blood-vessel was torn by the manipulations with the forceps or by ligaturing too fast, etc. The hemorrhage which thus ensued was very considerable, and it was very difficult to pick up the artery, which retracted behind the scalenus muscle. In one case he cut through the scalenus muscle to enable him to seize the end of the artery with a broad clamp. In ligaturing arteries, Professor Billroth usually applied two ligatures in their continuity, dividing the vessel between them. In the above-mentioned operation, however, he contented himself with one ligature, owing to the fragility of the inferior thyroid artery. He had never met with secondary hemorrhage in such cases. Professor Billroth has performed the operation in question in four cases of common goitre. In all of them there was a slight degree of fever, of short duration, but the absorption of the substance of the goitre was not attended with any ill effect on the general condition of the patients. The impression which the operation had made on him was a very favorable one, and he would repeat it in appropriate cases, but in future he would ligature all the four arteries at one sitting. In one of the cases thus operated upon he observed a slight degree of jaundice, which soon disappeared, and was probably due to absorption of blood. From a cosmetic point of view it had to be borne in mind that the ligature of all four arteries naturally caused four scars, as against the single lateral scar left after extirpation, which could easily be hidden by a small cravat. On the other hand, the attenuated appearance of the neck

from which the thyroid had been removed was a still greater disfigurement. Professor Billroth concludes by stating that, although ligature of the thyroid arteries was a valuable and interesting addition to our operative resources in the treatment of goitre, it would have a much greater importance if it were attended with similar results in the case of sarcoma and carcinoma of the thyroid gland. The attempt made by him in this direction failed. It was possible that ligature might be successful even in such cases, if done at an early enough period in the development of the disease.

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### *SALICYLATE OF MAGNESIUM IN TYPHOID FEVER.*

It will be remembered that a few years ago Desplats and Vulpian strongly recommended salicylate of bismuth in abdominal typhus. They claimed that it not only acted as an antipyretic in this disease, but also as an antiseptic and an antidiarrhœic.

According to the views of Huchard the drug loses its value on account of its antidiarrhœal properties, for, he says, copious and free movements of the bowels carry off infectious substances better than anything else. He therefore recommends that salicylate of magnesium be used in its place, and cites a long series of cases in which the drug rendered most valuable service. Its action was much less styptic than that of salicylic bismuth.

The manner of preparing the salt is as follows:

The salicylic acid is first dissolved in water, and while the solution is heated to boiling-point, carbonate of magnesium is added until the solution becomes saturated, and finally the salt crystallizes. These crystals form long, colorless needles, which are easily soluble in both water and alcohol, and have a rather bitter taste.

The action of the drug upon the typhoid patient is next observed in the disappearance of weakness, in the disappearance of the foul smell of the mouth, a decrease in the swelling of the abdomen, and a lessening of the decomposed odor of the fæces.

The decrease of mortality in cases of ileotyphus under this treatment is so great, says Huchard, "that the most enthusiastic followers of Brand's water treatment have just cause to be envious."

In cases where the drug had been used from the first, complications were but rarely observed. It also has the additional advantage over other drugs in the fact that it may be given in very large doses without producing any disagreeable accompanying symptoms whatever.

P. S. LAUT, of the Soc. de Méd. Pratique, said that he had used the drug as prescribed by Huchard for one year, and had always had the best possible results from such treatment.

The drug acted both as an antipyretic and antiseptic. The desired result was obtained by doses of 50 to 100 grains daily. In cases where the diarrhœa is copious it is not contraindicated, as even in doses of 100 to 150 grains its laxative action need not be taken into consideration.

The formula of the salt is as follows:

$$\left(C_6H_4\begin{matrix}COO\\OH\end{matrix}\right)_2Mg + 4H_2O.$$

It contains 74.6 per cent. of salicylic acid, and the daily doses, as prescribed by Huchard, contain only one-third the quantity of salicylic acid given by Vulpian, who, in the Hôtel Dieu, prescribed no less than 100 to 150 grains of acid "tale quale," to be given daily in wafers.

Salicylate of magnesium, as prepared by Von Heyden, is acid in reaction, and, as it is hygroscopic, is put up in glass bottles. To facilitate its administration the crystals are finely powdered.—*Pharmaceutische Post*, March 18, 1888.

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### *INCISION WITH DRAINAGE OF JOINTS.*

At a recent meeting of the Clinical Society of London (*Lancet*, May 5, 1888) MR. WAINWRIGHT read a case illustrating the "Advantage of Early Incision with Drainage as opposed to Excision of Joints." The patient, a boy aged 3, was admitted to the West London Hospital about two years ago with a large abscess superficial to the periosteum, covering almost the whole of the outer aspect of the left thigh, which was said to have resulted from a fall a fortnight previously. This was treated by antiseptic incision and drainage. A fortnight later, before the incision was quite healed, the right hip began to inflame, and at the end of another month, distinct fluctuation being detected in four of his joints, it was incised and a quantity of pus evacuated. Carious bone was then found in the anterior part of the neck of the femur, which was removed by scraping, the joints being otherwise healthy. An antiseptic dress-

ing was applied, and the wound healed in another month, leaving a perfectly movable joint. Meanwhile, some thickening, which had existed about the left knee from the commencement, became more pronounced, and that joint became tender and painful; so that, shortly after the right hip had healed, the left knee was freely incised, and the cartilaginous surfaces freed from an overgrowth of synovial membrane, by which they were completely covered, by means of a sharp spoon and scissors. Antiseptic dressing and drainage were used, and the child left the hospital about six weeks later with a plaster splint on the left knee, the wound having healed. He was admitted about seven months later, and a small exfoliation of bone was removed from a granulation cavity just about the left knee. The sinus then healed, but the knee had become partially flexed, from the splint having been removed by the parents against orders. An effort has been made to correct this by extension and another plaster splint, but considerable deformity still exists. The knee is nearly immovable, but all the movements of the right hip are perfect.

MR. BENNETT said it would be interesting if Mr. Wainwright could say where the scales came from which he described as having been removed from the side of the knee. He thought it was a sort of case by no means rare. The abscess described was such a one as followed inflammation due to injury. In such case the suppuration in the right hip while the child was lying quiet might be explained on the ground of pyæmia. This was a matter of some importance. He expressed himself as misled by the title of the paper, seeing that the operation performed on the knee-joint merited something more than being called drainage. On the whole, he questioned whether the condition of the joint which had been described was better than would have followed excision. He asked what was the condition as regarded locomotion.

MR. LUCAS mentioned a case in which three joints had been affected in succession, requiring excision. He thought that so far as the hip was concerned he would agree with what Mr. Wainwright had advocated,—viz., incision, examination, and removal of any carious bone in the neighborhood. Excision as at present practised was a very different operation to what it used to be. He always clipped away the synovial membrane all round before removing the bone.

MR. HOWARD MARSH thought the paper turned on the question as to whether the disease of the joint was tubercular or pyæmic. He has often seen good results follow Mr. Wainwright's treatment in pyæmic abscesses, but he doubted whether this would be the case in tubercular disease. He thought excision was destined to become more rare than heretofore. He himself had been very disappointed with the results obtained from excision of the hip.

MR. PARKER hoped that the possibly misleading title would not be allowed to detract from the excellent results of the treatment carried out.

MR. BENNETT asked whether Mr. Parker considered multiple abscess evidence of tubercular disease.

MR. PARKER said they did not absolutely prove the existence of tubercular disease, but if a child had disease of the knee, and then polypoid disease of the hip, the evidence was in favor of struma.

MR. SYMONDS said he had examined the child, and thought it was a brilliant result. At the same time, he was not sure that the child was suffering from tubercular disease. He suggested that the hip-disease was due to extension upwards. His own experience was decidedly in favor of the operation. There were, however, a number of cases in which excision was the only operation.

SIR WILLIAM MACCORMAC said the knee was evidently the seat of strumous synovitis which had been erased with arthrectomy.

MR. WAINWRIGHT, in reply, said the bone he removed from the thigh was not carious. The child's temperature never rose above 100°, and was generally normal, which he thought was inconsistent with pyæmia. He did not erase the hip in any case, and did nothing to the synovial membrane or the cartilage.

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### *TREATMENT OF TYPHLITIS.*

According to the Paris correspondent of the *British Medical Journal* for May 5, 1888, M. BOUCHARD recommends the following treatment for typhlitis: Soothe pain by a morphine injection, if very sharp at first; if not, a thick layer of Neapolitan ointment with belladonna, covered by a large, very hot poultice. Aseptic rectal injections twice a day, with at least one litre of water, to which are added five grammes of borate of soda, and two or three teaspoonfuls of tincture of benzoin, mixed with camphorated al-

cohol. The injections must be given very slowly. Absolute rest is indispensable. No purgatives, or, if any, only those of the mildest kind, such as magnesia in water, etc. Only the lightest diet, which will leave no deposit for intestinal fermentation, should be allowed. Milk and alkaline drinks may be given in small quantities at a time; later on, milk, thickened with yolks of eggs. If at the end of a fortnight some thickening can still be felt round the cæcum, a small blister should be applied.

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*INTRA-MUSCULAR INJECTION OF MERCURY IN SYPHILIS.*

At the meeting of the Medical Society of London, held April 23, 1888, Mr. J. Astley Bloxam read an interesting communication on the intra-muscular injection of mercury in syphilis (*Lancet*, April 28, 1888). His attention was first directed to this method by a patient who, being under his care, had occasion to go to Berlin, and was there treated by the intra-muscular method by Dr. Lewin, who had arrived at the conclusion that from 6 to 8 grains of perchloride of mercury injected into the tissues were sufficient to effect a cure. Mr. Bloxam was so impressed with the good results obtained that, in 1884, he determined to inject all the cases that presented themselves at the Lock Hospital. Against all the usual methods of administering mercury, it must be urged that a considerable time elapsed before any of the effects of the drug could be noticed, and that when administered by the mouth or by inunction its action was most uncertain, and apt to give rise to rapid salivation. Purging, colic, and gastric irritation were also apt to supervene and cause suspension of the treatment, and we had no means of knowing the amount of mercury that was being absorbed at any one time during the course of the disease, whereas by this method the exact amount of the drug that passed into the system could be estimated. He had employed it in all stages of the disease with excellent results. Various solutions had been proposed. Sigmund's consisted of 4 grains of the sublimate with 80 of common salt to 1 ounce of water: dose from 10 to 20 minims. Rogazzoni recommended 4 grains of the biniodide of mercury with enough iodide of potassium to dissolve it—4 grains or less—with water, 256 minims; dose, 10 drops. Then there were calomel and glycerin, 1 in 10; and calomel and vaseline, 1 in 5. Since 1884 he himself had employed bichloride of mercury injection nineteen hundred and twenty-four times at the Lock Hospital. As it was impossible for him to see the patients oftener than once a week, he selected a preparation, eight grains to the ounce, and injected 20 drops of this solution (equal to $\frac{1}{3}$ grain of the salt) deeply into the gluteus maximus each week on alternate sides. An objection to this solution was the difficulty in preventing it undergoing decomposition under the influence of light. The pain produced varied considerably, and seemed largely due to the bulk of the solution. In only one case did an abscess form, but the patient was subsequently injected twenty-six times without ill effect. When bleeding took place at the seat of puncture indurated nodules formed, which remained for two or three weeks. His observations with calomel and glycerin were not very encouraging; it required a large needle, the syringe was difficult to fill, the solution had to be constantly stirred or shaken up, and the injection caused a good deal of pain and was tedious to carry out. He used 18 minims, which were equal to $1\frac{2}{3}$ grains of calomel. Solution of calomel and vaseline he had used only three times in quantities of 9 minims for a dose; all three were followed by much pain and the formation of abscess. These cases led him to endeavor to find a solution that should give a minimum of pain, comprise the smallest bulk, and yet speedily influence the system. These conditions he found were best fulfilled by a solution of sal alembroth, which should not contain an excess of chloride of ammonium, and was made by dissolving 32 grains of perchloride of mercury in 16 grains of pure chloride of ammonium and water sufficient to yield 2 fluid-ounces of product; 10 minims of this equalled $\frac{1}{3}$ grain of the salt; it was absolutely permanent, and not liable to fungoid growths or precipitation. The precautions as to injecting could be stated as follows: (1) the injection should be made deeply into the muscles of the buttock, changing sides alternately; (2) the quantity used should be 10 minims, and the patient should be injected once a week. He had used this method upwards of nine hundred times since last November; it caused little or no pain, and no induration at the seat of puncture unless blood was extravasated. In four cases two injections produced slight mercurialism; in none had abscess followed. The patients, after injection, walked away and resumed their employment, no special precautions being taken with regard to diet, and in many no medicine, be-

yond a little quinine, was exhibited. The primary lesion usually healed after a few injections, and the sequelæ, in some cases extremely severe, were at once arrested. In all cases the effect on the eruptions had been most marked; in seven or eight weeks the most obstinate and recalcitrant skin manifestations melted away, the throat and the glands alone remaining as evidences of the disease. At this period the injection was usually discontinued to once a fortnight, until all, or nearly all, the symptoms had disappeared; then the patient was injected once a month, so carrying on the treatment for a year or eighteen months. The average quantity of the perchloride administered during the whole course of treatment was from eight to ten grains, tobacco and alcohol being forbidden. With regard to the elimination of mercury, it rapidly appeared in the urine after every preparation except the biniodide, which latter could be perceived only after the tenth injection. The quantity excreted varied *pari passu* with the amount injected, but the proportion varied according to the particular preparation used. The metal could be detected in the urine for a fortnight after the cessation of treatment, and the quantity in the urine was increased when stomatitis was set up. The hypodermic needles used should be frequently changed, as they were likely to corrode and become brittle. The best syringe was a vulcanized one, to which spare needles could readily be fitted.

Mr. Owen failed to see that this method was superior to the older fashions of treatment; he himself preferred to use small doses of gray powder by mouth, frequently repeated.

Mr. J. H. Morgan said that in the practice of Sigmund, of Vienna, he had frequently seen abscesses follow intra-muscular injection, but Mr. Bloxam seemed now to have obviated this untoward complication.

Mr. Bernard Pitts thought that a medicine administered once weekly could not be as efficacious as one administered three times daily.

Dr. Handford said that a combination of perchloride of mercury with peptone was now recommended in Vienna as being less likely to set up irritation.

Dr. Heron had found from personal experience that intra-muscular injection was painful. He referred to a case of obstinate cutaneous syphilitic eruption which resisted other methods of treatment, but which had almost entirely disappeared after thirteen intra-muscular injections.

Mr. Bloxam never administered the injections till he was sure that syphilis was present. Relapses were not more common than with other methods of treatment. If he found once a week insufficient, he felt inclined to try it more frequently.

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*ANTIFEBRIN AS AN ANTIEPILEPTIC.*

In the insane asylum in Hermannstadt, Dr. B. Borosnyóv has lately tried antifebrin in nine cases of epilepsy,—six males and three females. First they were given 90 to 120 grains of bromide, and then 4 to 30 grains of antifebrin. There were also days allowed to pass without any treatment whatever. Comparison showed that in all cases bromide was more active in reducing the frequency of the attacks than antifebrin.

In general it may, therefore, be stated that antifebrin has no effect upon epilepsy. It would also not be advisable to continue its use for any great length of time, as cyanosis was observed in every case.—*Centralblatt f. d. Gesammte Therapie*, March, 1888.

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*TANNIN IN THE TREATMENT OF TUBERCULAR DISEASE.*

At the fifth meeting of the Società Italiana di Chirurgia, recently held at Naples, Professor Andrea Ceccherelli, of Parma, drew attention to the value of tannin in the treatment of local affections of tubercular origin. From experiments which he had made on animals, and from clinical experience, he believed it to be a powerful antiseptic, with a specific power of destroying the tubercular virus. He found that the addition of tannin prevented the putrefaction of animal tissues and fluids, and that decomposition was very considerably delayed in the bodies of animals which, while alive, had undergone a course of treatment with tannin. He had also found that, while he could produce tuberculosis in certain animals by the injection of phthisical sputa or of tubercle-bacilli, the injections produced no bad effect when tannin was injected simultaneously, or was given internally every day for some time. He had treated twenty patients suffering from tubercular diseases with tannin, both externally and internally, with very satisfactory results. He therefore looks upon tannin as an excellent remedy in tubercular affections of the bones and joints; under its influence ulcers heal kindly, any tubercular formations that may already exist are destroyed, and generalization of the disease is

prevented. Dr. Ceccherelli considers that tannin is much superior to iodoform in the treatment of tubercular disease, besides having the further advantage of being perfectly harmless.—*British Medical Journal*, April 7, 1888.

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### *INTRA-VASCULAR INJECTIONS IN COLLAPSE.*

Dr. Diarkonoff has made a number of experiments on ten healthy dogs with a view of testing the effect of an intra-vascular injection of common salt, to which a little alkali has been added, on a collapsed condition of the organism. In order to induce collapse, chloroform was administered, and when the animal had shown signs of being in a more or less dangerous condition a small quantity of Schwarz's solution (which consists of chloride of sodium 6 grammes, caustic soda .05 gramme, in 1000 grammes of distilled water) was introduced into the distal end of the femoral artery, or into the proximal end of the femoral vein or the jugular vein. A remarkable effect was produced by these injections on the character of the pulse and on the blood-pressure. In some cases in which the heart appeared to have stopped, contractions were by this means reinduced. The effect on the respiration was not so constant; still, this usually improved. Of course, when the chloroform was pushed beyond a certain point, saline injections and artificial respiration alike failed.—*Lancet*, April 21, 1888.

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### *THE TREATMENT OF PERFORATION DUE TO GASTRIC ULCER.*

In the *Birmingham Med. Rev.* for April, 1888, Dr. John W. Taylor publishes an elaborate account of several cases of perforation due to gastric ulcer, and he summarizes his conclusions as regards the treatment of such cases as follows:

First. *As soon as the peritonitis of perforation is declared the abdomen should be opened and the peritoneum thoroughly washed out and made clean.* The "washing out" is the essential part of the operation, and the method of doing this is of importance.

By siphon or douche a continuous stream of warm water is obtained. The rubber tubing of the siphon or douche terminates in a tube of glass or metal, closed at its extremity, but possessing two large lateral perforations, the edges of which are perfectly smooth. By its means a double current of warm water is carried to every part of the abdomen and pelvis in succession. The intestines are gently shaken in the water stream, and the washing is continued until the returning fluid is perfectly clear. An ordinary ewerful of warm water contains the amount usually necessary for the "washing out;" sometimes more may be required.

Beyond this, in the first instance, it will not be wise to go, except in very unusual cases, and this for two reasons,—(1) the collapse is usually so marked and profound that a prolonged operation is directly contra-indicated; and (2) the perforation, being usually about the posterior wall or lesser curvature, could often be directly dealt with only after opening the stomach. There is no external sign, not even the aspect, of the perforation, if this be visible, which is any guide to the exact situation or extent of the ulcer as regards the mucous membrane, and a possible incision through the floor of a deeply-excavated ulcer would be a bad commencement for the operative repair of a perforation. In a limited number of cases the perforation may be in a part of the anterior wall untouched by the left lobe of the liver and unprotected by adhesions. In these cases particles of semi-digested food or fluid, evidently from the stomach, will be more likely to be met with on opening the peritoneum, and the treatment should be different. There can be no doubt that in such cases (which, however, will be rare) the perforation should be found, if possible, and accurately closed by Lembert sutures when the section is made for the peritonitis.

Second. *The alimentation subsequent to the laparotomy for peritonitis should be rigidly rectal or extra-gastric for a prolonged period, probably for three weeks if possible.* A careful consideration of the daily record and temperature chart of Dr. Taylor's case, viewed in connection with the fact that at no time was there any absolute evidence that directly extravasated matter formed the nucleus of the abscess, points to the conclusion that the abscess was the result of irritation occurring subsequent to the laparotomy, and that the allowance of food so early as the third or fourth day was mistaken and prejudicial. If so, we may hope that by more careful attention to this particular we may prevent the formation of this special form of abscess.

Third. *If after successful laparotomy for peritonitis due to perforation symptoms should arise similar to those which were found in the cases described,—viz., abdominal pain on the left*

*side, a hectic temperature, cough, and rapid breathing, with delayed manifestation of any adequate cause for this condition,—the existence of a sub-diaphragmatic abscess may be probably suspected.* The case should be diligently watched for the first physical signs of its locality, and as early as possible the abscess should be opened; the history of Dr. Taylor's case tending to show that this may sometimes be done with a high probability of complete success.

One subsidiary question remains, Where should the incision be made in the primary laparotomy? Dr. Taylor thinks in the usual situation between the umbilicus and the pubes. Until diagnosis has reached a perfection at present altogether beyond us, it is important in every case of acute peritonitis occurring in a woman, if the abdomen be opened, that the pelvic organs should be capable of satisfactory examination. Furthermore, all fluids tend to collect in the lower part of the abdomen and pelvis, and, if the case be managed wisely afterwards, *it is much more important to thoroughly clean out the peritoneal cavity and pelvis than to accurately sew up the point of perforation.* This opinion does not rest solely on the case here reported, but on a somewhat extensive experience of abdominal work, in which not a few analogous cases have occurred tending to confirm the correctness of the advice here given.

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*TREATMENT OF PUERPERAL ECLAMPSIA.*

In a paper on the treatment of puerperal eclampsia, published in the *Prager Medicinische Wochenschrift*, PROFESSOR G. VEIT, of Rostock, writes that, having had experience of more than sixty cases of this affection during a practice of thirty years, he was up to 1886 always in the habit of laying the utmost stress on the importance of inducing deep and prolonged narcosis as the main treatment, and when the paroxysms came on during labor he hastened the birth as much as possible without endangering the mother. In order to produce narcosis he was in the habit of combining subcutaneous injections of morphine with the inhalation of chloroform. The initial dose of morphine used was about ½ of a grain, and this was followed by still larger doses. In one case he gave about 3 grains in the course of twenty-nine hours. Sometimes the respiration was affected and tracheal râles were heard. These large doses of morphine, however, he says, never exerted any ill effect on the child. The only cases in which this occurred were among those in which only small doses had been given. Up to 1886 he had paid but little attention to the state of the kidneys, except where the eclampsia occurred during the continuance of pregnancy,—*i.e.*, before labor had commenced. During that year, however, he had the misfortune to lose two cases of eclampsia parturientium. Since that time he has directed his treatment of eclampsia during and after labor to the kidney affection mainly, giving hot baths and blanket packs, as used by Liebermeister and Breus. Wet-sheet packs, as recommended by Jaquet and Polster, he did not find so efficacious. He has also employed pilocarpine. Sometimes, too, narcosis is also required, and Professor Veit thinks that even in the worst and most dangerous cases the simultaneous employment of diaphoresis and narcosis should be able to bring the patient through. —*Lancet*, April 28, 1888.

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*THE TREATMENT OF RECTAL PAIN BY CONIUM.*

In the *Practitioner* for April, 1888, DR. WHITLA publishes a paper which calls attention to the value of hemlock as a local anæsthetic in painful affections of the rectum and anus.

In pruritus ani, especially when associated with or caused by hemorrhoids, or fissures about the anus or in the lower part of the rectum, the physician or surgeon often finds much difficulty in giving relief. The pain and annoyance caused by a minute fissure is very often uninfluenced by cocaine, even when used as a strong solution, and if relief should follow it is seldom complete, and is always of such very short duration that the patient will generally discontinue its use, preferring the misery of his ailment to the exacerbation of suffering caused by the application of the remedy.

Morphine, carbolic acid, creasote, belladonna, and the usual array of local sedatives, have been found in the hands of most observers to give very uncertain results in painful conditions of this region of the body. It will be, perhaps, the experience of most that they have more frequently aggravated than relieved. Their application, when used to allay the pain of an inflamed pile, has sometimes added a more distressing symptom,—namely, itching.

It is a long time since conium has been recommended for use as a local anæsthetic,

but this belief in the case of the extract will be but rarely substantiated. Dr. Whitla believes, however, that the extract of the British Pharmacopœia is a most unreliable and generally almost inert preparation, and has experimented with an ointment prepared in the following manner:

Two ounces of the pharmacopœial juice are placed in a small evaporating-dish, and permitted to evaporate slowly at a heat under 150° F. till the bulk is reduced to about one and a half or two drachms. This can be done by placing the dish on the top of an ordinary domestic hot-water cistern for twenty-four or forty-eight hours. The syrupy liquid is then carefully triturated with as much lanolin as will make up the weight to one ounce; the result is a perfectly smooth adhesive ointment of a light brown or dark fawn color and stable.

Happening to have several rectal cases, in which severe pain and torturing pruritus were prominent features, the ointment was carefully applied. One was a case of multiple small fissures, accompanied with intolerable itching; another was associated with severe tenesmus and excoriations from the pus, flowing from an iliac abscess bursting through the *levator ani* muscle and penetrating the rectal walls; another was complicated by a bleeding villous growth. These, with two cases of hemorrhoids, one of which had an ulcerated surface, were markedly and speedily relieved by the conium ointment after nearly every known remedy had failed.

In a considerable number of cases during the last year the same highly gratifying success was achieved by this remedy, while he cannot recollect a single instance where the ointment caused inconvenience. It should be freely smeared *inside* the sphincter, and, owing to its adhesive quality, can be carried a considerable distance up the rectum by the introduction of the fore-finger of the patient.

Dr. Whitla never noticed after its use the serious drawback which follows the prolonged application of every other greasy application to this region,—namely, a tender, sodden, or raw state of the skin about the margin of the anus.

The ointment appears to paralyze the endings of the *motor* nerves distributed to the fine muscular layer under the surface of the mucous membrane; the reflex twitchings of this layer keep up the perpetual pain and uneasiness in diseases of the rectum and anus associated with abrasions, ulcerations, or fissures.

Dr. Whitla has likewise obtained relief from its use in vaginismus and some affections of the male urethra, and finds it a good lubricant for the sound or catheter. Of the ointment prepared according to the above formula, ten or twelve grains of the persulphate of iron may be added. This decoction of conium with iron should always have trial in cases of fissure before resorting to the knife or cautery.

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### *ORTHOSYPHON STAMINEUS.*

According to the Paris correspondent of the *British Medical Journal* for May 5, 1888, Dr. Frochard recommends a powerful diuretic, *Orthosyphon stamineus*, in the form of Java tea, in treating gravel and arthritis. He records the following cases: Case I., H., aged 60, had passed gravel in his urine for a year. An infusion of Java tea (5 grammes to the litre) was prescribed daily. The urine gradually became clear and abundant. Case II., F., aged 52, for six months had suffered every three weeks from nephritic colic, followed by the expulsion of large calculi. Java tea was prescribed in the same way as in Case I. In the next two months he had only one attack, and during the five months which had since elapsed he had not suffered at all. Case III., M., aged 46, had suffered since 1883 from ascites due to cirrhosis of the liver. For a month he took Java tea, at first 5 grammes, and then 10 grammes in a litre of water. The abdomen diminished in size several centimetres weekly. The drug is perfectly harmless. Dr. Frochard has only used it in the form of Java tea, and pills obtained direct from the importer, M. Périnelle.

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### *THE DANGERS AND ACCIDENTS OF LOCAL TREATMENT IN PUERPERAL CASES.*

At a recent meeting of the Medical and Chirurgical Society of Montreal, Dr. J. C. Cameron read a paper with the above title, of which the following represent his most important conclusions (*Canada Med. Record*, February, 1888):

1. The patient should always be placed across the bed in the *dorsal* position, with hips well raised and thighs everted. The operator has then better control over the direction and force of the injection, as well as over the outflow. In intra-uterine douching, the anterior lip can be more easily seized and the uterine cavity straightened, if the patient is lying in the dorsal position.

2. The vaginal or uterine nozzle should be *inflexible* (glass or hard rubber), without a central orifice in the bulb (to avoid injecting fluid through the Fallopian tubes or dislodging thrombi from the placental site). The openings in the bulb should be directed slightly backwards, so that the injection-stream may flow away from the fundus, not towards it.

3. A sufficient outflow should be secured. The vaginal orifice should be kept open. Before an intra-uterine douche is given, the anterior lip should be seized with a vulsellum or tenaculum, and drawn gently downwards till the uterine cavity is straightened. The nozzle can then be more easily introduced, and a good outflow is secured. After the operation it should always be ascertained that there is no pouching of the vagina or retention of fluid.

4. The quantity of fluid injected should be small; from one to two litres is quite sufficient. Large and long-continued injections are not more effectual, while they greatly increase the risks.

5. Antiseptic injections should be weak, unless powerful germicide action is required in acute septic cases. For an ordinary vaginal douche a sublimate solution of 1 to 7000 or 1 to 5000 is quite strong enough. The strong solutions (1 to 2000 or 1 to 1000, or even 1 to 500) should be used only in urgent septic cases, and then with the greatest caution. After a sublimate injection, a pint or two of plain hot water should be run through to wash away any retained sublimate, thus lessening the risks of absorption.

6. The injection should always be used hot (108° to 112° F.). Hot water is a powerful stimulant, causing the uterus to contract firmly, thus closing up the sinuses and tubes, and expelling the injection-fluid from its cavity.

7. To prevent nervous chill and rise of temperature, a glass of brandy or some diffusible stimulant should be given fifteen minutes before operating. The stimulant acts primarily by bracing up the vascular system, and secondarily by increasing the resisting power of the nervous system. If this precaution be taken, and the injection be given rapidly and without undue exposure or chilling of the surface, rigors and fever will rarely follow. In very nervous, excitable patients, or where there is likely to be pain, either may be advisable.

During the more severe methods of intra-uterine treatment, such as curetting or brushing (écouvillonage of Doléris), the placental site is apt to be disturbed; some of the little plugs may be scraped or brushed away from the mouths of vessels, permitting the entrance of air, fluid, or septic matter. Curetting or brushing should be followed at once by a small douche of very hot water, given very slowly and carefully; a suppository of iodoform should then be passed into the uterine cavity, and the vagina loosely packed with a strip of iodoform gauze.

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### *HEMIANOPSIA CURED BY IODIDE OF POTASSIUM.*

According to the Vienna correspondent of the *British Med. Journ.*, April 14, 1888, at a recent meeting of the Royal Society of Physicians of Buda-Pesth, Dr. St. Csapodi brought forward a man, aged 53 years, who, after a sudden attack of giddiness, repeated twice on the same day, had remarked on the following day that he could not see objects situated on his right side. He also suffered from headache of the left side. Examination showed that vision was absent on the right side. No organic changes were found except some signs of endarteritis. Improvement took place under iodide of potassium; a symmetrical scotoma, situated 15° outside of the fixation centre, remained, which did not, however, interfere with vision. The hemianopsia in this case was probably due to hemorrhage into the cerebral cortex.

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### *CANCER TREATED BY ERYSIPELAS INOCULATION.*

That an attack of erysipelas will often profoundly modify, or even cure, another disease which may be present in the subject at the time has long been known; but it remained for Busch and Fehleisen to deliberately expose patients suffering from malignant growths to the action of the virus in the hope of curing the graver malady. Fehleisen's were the first cases in which the virus was inoculated, and his cases served as subsidiary confirmation of the pathogenic character of the streptococcus which he had isolated, and cultures of which were employed in his inoculations. The method, he remarks, is naturally only to be thought of when the malignant growth is beyond the reach of operative removal. (See "Memoir on Erysipelas," in the selected essays published by the New Sydenham So-

ciety, 1886.) The most recent adoption of this measure is that recorded by DR. AXEL HOLST, of Christiania, in the current number of the *Centralblatt für Bakteriologie* (No. 13). The patient was a woman, aged 40, who had a recurrent carcinoma of the right breast, for which she declined further operation. In a few months the cancer had infiltrated the greater part of the surface of the right half of the chest, forming a red brawny mass, with a raw surface, nodulated on the margins, while the axillary and clavicular glands were much enlarged, and the upper limb was œdematous. In spite of the unfavorable aspect of the case, it was decided to try the effect of erysipelas inoculation. Accordingly, on August 10 last, the inoculation was performed by scarification of the raw surface, the cultures used being the fifteenth generation (in peptone agar-agar) from a case of erysipelas, nineteen months and a half previously. Beyond a slight rigor next day, no effect followed; and it was further found that the material gave no result when inoculated in a rabbit's ear. Dr. Fehleisen was applied to, and on the 22d the material he sent was inoculated in several parts of the diseased surface, and this time with success. After twenty-one hours the patient had a series of rigors, followed by the appearance of an erysipelatous blush, which within thirty hours extended over the whole right arm, and later spread to the left side of the chest, back, and even to the left arm. In a few days the erysipelatous area was confined to a margin from three to six centimetres in width; and on the seventh day the fever, which throughout had not been high, fell by crisis. At the end of four months and a half the erysipelas still persisted on the right arm, but the patient had manifestly lost ground. During the first two months and a half the progress of the cancer appeared to be arrested, and for some distance the wound had healed over, while the induration had become less marked. But the right arm still remained œdematous, and after the period named the ulceration broke out afresh, the supra-clavicular glands again increased in size, and fresh nodules appeared, one in the left breast. The inoculation had, then, probably prolonged life, for the arrest in the progress of the cancer was marked; but it may well be that the patient's loss of strength and of appetite (which prior to the inoculation had been remarkably good) was due to the erysipelas, which persisted on the right arm to the end. To us it seems that the case was hardly a suitable one for this treatment, which at any time it must, to say the least, require some courage to adopt.—*Lancet*, April 7, 1888.

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### *THE OINTMENT OF THE NITRATE OF MERCURY AS AN ABORTIFACIENT OF BOILS AND FELONS.*

For the last six years DR. ROBERT C. KENNER (*Med. and Surg. Reporter*, April 14, 1888) states that he has used the ointment of nitrate of mercury as an abortifacient of boils and felons with a degree of success that has followed upon the use of no other agent for the same purpose. He claims that he has been able to abort nearly all the cases which came under his care before suppuration had commenced. The application of the ointment is not painful, and in about twelve hours the pain disappears, and there is a peculiar drawing sensation, which continues several hours, though it is not unpleasant, and then follows a complete cessation of all pain and uncomfortable sensations.

His method of applying it to felons is to cover the entire finger with the ointment to the thickness of an eighth of an inch. He then puts a piece of thick sticking-plaster around the finger, the edge of one side overlapping the other, and the ends folded and sealed by thinner plaster. The dressing may remain for twenty-four hours, at which time no further treatment will be usually necessary. He reports several cases in which cure was produced by these means.

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### *VAGINAL ANTISEPSIS.*

DR. F. VERCHIRE has recently published a paper on vaginal antisepsis, of which the following is an abstract (*Brit. Med. Journ.*, May 5, 1888): Vaginal and uterine cleanliness is one of the greatest achievements of modern times, and, thanks to it, gynæcology has become surgical and effective. For a few days before operation or childbirth vaginal asepsis must be established and maintained. The author passes in review the various liquids employed to obtain vaginal asepsis, carbolic acid, boric acid, bichloride or biniodide of mercury, etc. Carbolic acid, in order to be efficacious, must be used at a strength of 40 in 1000, when it becomes too irritating to the mucous membrane of the vagina and uterus; boric acid, on the contrary, is not energetic enough. There remain the mercurial solutions, which are the best; above all Van

Swieten's solution. For vaginal injections it may be used pure, but for intra-uterine injections it is better to employ a weak solution of about one-third of the liquid to two-thirds of water. The surgeon or accoucheur should not trust to the patient, but should give the injections himself twice a day for four or five days before the confinement or operation. Between the injections occlusion must be maintained by means of a pad of iodoform wool, which should remain *in situ* night and day. Should the odor of iodoform be disagreeable to the patient, ground coffee, Tonka bean, etc., should be used to disguise it. After operation, the antiseptic measures must be continued with the same care until healing is complete. After delivery, the iodoform pad is not necessary, and may be replaced by iodoform gauze.

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### *THE TREATMENT OF TYMPANITES BY PUNCTURE.*

At the meeting of the Hunterian Society, held March 28, 1888, Dr. R. J. Ryle read a paper on a case of tympanites treated by puncture through the abdominal wall (*Lancet*, April 7, 1888). The patient, a man aged 46, came under treatment in October, 1887, with vomiting, paroxysmal pain, and constipation of about ten days' duration. Examination of the abdomen showed considerable fulness, but no tumor was felt, and examination per rectum revealed nothing. Enemata and O'Beirne's tube gave no information. Colotomy was proposed, but declined by the patient; therefore puncture of the intestine to relieve distension was resorted to as the only treatment which promised relief. Eight punctures were made, with considerable relief to the distension, but with the result of setting up an attack of violent peristaltic contraction about half an hour afterwards. Three days later it was necessary to puncture again in three places, and two precautions were used to prevent peristalsis,—viz.: (1) Hypodermic injection of morpho-atropine, and (2) use of a larger aspirating needle. A very large quantity of gas was evacuated. No violent peristalsis followed. Forty-eight hours later the bowels opened. After a fortnight symptoms of obstruction returned, and puncture again became necessary, the same precautions being taken as on the former occasion, and in the course of the following three weeks puncturing was four times repeated. Great temporary relief was gained, but the patient gradually sank and died. A post-mortem examination showed an annular stricture of the first part of the rectum, but no evidence of peritonitis or extravasation of fæces, and with the exception of certain small black spots no trace of the puncture was visible in the wall of the bowel. The points of interest in the diagnosis of this case of chronic obstruction were then discussed; and, secondly, those of the treatment by puncture. As to the latter, the relief afforded by this procedure was of value, for three reasons: 1. As checking the respiratory and circulatory difficulties consequent on extreme distension. 2. As diminishing the direct risks of distension,—viz., rupture and peritonitis. 3. As favoring the re-establishment of the normal intestinal action. The chief mode, however, in which puncture tended to produce evacuation of the bowel is by exciting brisk peristalsis, and this is a result which, as in the present instance, may require to be guarded against. As to the dangers of intestinal puncture, it is impossible to state that there are none; thinning or ulceration of some part of the bowel may convert a puncture into a rent. The same might happen from movement of the empaled bowel, or liquid fæces might be conveyed from the needle to the peritoneum. But a much less hypothetical danger seemed to be the rupture of the diseased bowel by the violent peristalsis set up by puncturing, or if the puncturing is very free. The reality of this risk is shown (possibly) by the history of a case of Dr. Bristowe's, recorded in the Pathological Society Transactions for 1872; and still more clearly by a case recorded in 1878 in the *British Medical Journal* by Dr. Coupland and Mr. Morris, in which rupture was due to peristalsis caused by puncture. If this view of the danger be correct, the proceeding comes to resemble the administration of ergot during labor, and the cases most suitable for the treatment would seem to be those which are known to be characterized by healthy bowel and an absence of insuperable obstruction, such as sometimes occurs in obstetric practice or after abdominal operations. Perhaps, too, as has been suggested by Dr. Galabin, this treatment might be of use in commencing peritonitis. The beneficial effects of simple relief of tension in checking the progress of inflammation are shown in periostitis and cellulitis, and probably a few needle punctures would be less dangerous than continued distension to the peritoneal coat. From similar considerations he suggested its employment in enteric fever, more

especially if, as was probable, excessive peristalsis can be prevented by opium. The specimen was shown at the meeting.

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*ANTIFEBRIN IN EPILEPSY.*

According to the Vienna correspondent of the *Brit. Med. Journ.*, April 14, 1888, DR. BOROSNYÓI, of Hermannstadt, referring to the use of antifebrin as an anti-epileptic, reports in the *Orvosi Hetilap* nine cases of epilepsy (six males and three females) in the lunatic asylum of Hermannstadt, which had been first treated with bromide of potassium, and later on with antifebrin. On comparing the results which were obtained with bromide of potassium (from 6 to 9 grammes) with those obtained with antifebrin (from .25 to 2 grammes), it was evident that the former had in all cases a much more powerful effect than the latter. Antifebrin, as a rule, did not seem to have influence on the disease. Even if larger doses of this drug should prove to be useful, it would not be advisable to carry out a course of treatment with it, as cyanosis was observed in all cases treated with antifebrin.

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*SACCHARIN, AND ITS DANGERS.*

According to the Paris correspondent of the *Med. Press and Circular*, April 25, 1888, M. WORMS, in introducing a discussion on this subject at the Académie de Médecine, said that the most interesting application that he made of this remarkable product was that of enabling those who suffer from glycosuria the possibility of eating sweetened aliments without the fear of increasing their malady. But he found that saccharin was not very well borne by the patients to whom he gave it. Out of four treated, only one was able to continue its use, the others suffering from gastric disturbance. Consequently, he considered there would exist a certain amount of danger to the public if the drug were to be extensively used by grocers, confectioners, etc., in the sweetening of their products, as twenty grains of saccharin have a sweetening power equal to nine ounces of white sugar.

M. DUJARDIN said he had not met with the accidents mentioned by his colleague; he gave as much as 120 grains to a dog without witnessing any ill effects; consequently, saccharin was not toxic. However, it could not be considered as an aliment, because it was found after ingestion in the urine unchanged. He agreed with M. Worms on the necessity of examining the subject more fully, and especially in a commercial point of view, as if this product of tar were to be used by the trades mentioned a very serious prejudice would be caused to one of their most important national industries.

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*RETENTION OF URIC ACID DUE TO CERTAIN DRUGS.*

At a recent meeting of the Royal Medical and Chirurgical Society, DR. ALEXANDER HAIG communicated a paper on the effects in disease connected with uric acid of some drugs which cause retention of uric acid in contrast with the action of salicylates (*Brit. Med. Journ.*, April 28, 1888). He said a large part of the value of salicylates in uric acid diseases was due to their preventing acids from causing retention of uric acid, as pointed out in a previous paper. Some drugs that had the opposite action of causing retention of uric acid were contrasted with the salicylates, and their actions in some diseases compared. The drugs whose action on uric acid excretion was now brought forward were lead, iron, and lithia, and it was shown that they caused retention of uric acid, though lithia produced this effect in an indirect manner. The doubtful value of lithia in gout and as a solvent of uric acid was pointed out. The relation of dyspepsia to the uric acid headache, and the way in which it explained the periodicity of the attacks, were referred to. The effects on the nerve-centres of any causes of depression in headaches and epilepsy were described. Sir A. Garrod's investigations on chronic lead-poisoning, the presence of uric acid in the blood of such cases, and the action of lead in precipitating an attack of gout were stated to be in accord with the facts now brought forward. Lead was mentioned as a cause of epilepsy, which could be easily explained if epilepsy were due to uric acid. Iron caused a relapse in gout, and did harm in epilepsy and in uric-acid headache. Salicylates were valuable in gout, chiefly in prevention; they did not act promptly in acute gout. Reasons were given for believing that some cases of epilepsy were due to uric acid, just as some cases of headache had been shown to be in previous papers. Recent observations by the writer in the *Neurologisches Centralblatt* were referred to. Attention was called to the close parallel between epilepsy and the headache in question, and also to the close clinical relationship of both to gout. It was sug-

gested that epileptic fits might be prevented by salicylates in place of bromides. Salicylates prevented accumulation of uric acid, and thus stopped fits due to such accumulation. Such cases of epilepsy might probably be cured by the diet which was so useful in the uric-acid headache. When alkalies were given along with bromides in epilepsy, less bromides would suffice to keep off the fits. The observations of Dr. Radcliffe on this point were referred to. This result was due to the fact that alkalies (as previously pointed out by the writer) prevented retention and accumulation of uric acid; hence, as there was less of the irritant, less bromide would suffice to stop the fits. Dr. Radcliffe's remarks about iron and diet pointed in the same direction as to the causation of epilepsy by uric acid. The same reasoning was applied to attacks of gout and their prevention by salicylates.

Dr. Ormerod was glad to hear of any fresh palliative, or possibly curative, treatment for epilepsy. He confessed that the theory he had just listened to seemed to him to be based on very few facts, and inapplicable to the great majority of cases of epilepsy. At any rate, a long clinical testing was required. He had had experience that afternoon of two interesting cases of epilepsy in this connection. One was in a young man who had typical attacks of migraine, beginning with flashes of light in the eyes, and going on to vomiting and headache. The remarkable point was that exactly similar flashes of light in him sometimes led up to epileptic convulsions and biting of the tongue. There was no history of gout. In the other case, a boy 11 years old, there was a strong rheumatic history in the family, and he had prescribed sodium salicylate, 10 grains three times a day. For five weeks there had been no fit, but after that there came a batch of fits as bad as ever.

Dr. Lauder Brunton considered Dr. Haig's paper a valuable attempt to solve one of the most difficult of medical problems,—the cause of gout. He thought no sufficient distinction had been made between retention of uric acid and diminished formation. Sir Alfred Garrod had first shown how lead brought on gout in persons who had not inherited it. He had been himself much struck by a case of diarrhœa, in which, after all the vegetable drugs had failed, he had given acetate of lead, and that had brought on rapidly a condition of red and swollen joints. In epilepsy he must beg to insist that there were many factors at work. So, too, in migraine there might be local conditions, such as decayed teeth or anomalies of vision and inequalities of the two eyes, which were shown to be the determining factors, because, with their correction, the headaches ceased. Defects of vision he had found to affect headache in nearly nine cases out of ten that he saw. In a lady who had come from Massachusetts there was much pain in the back of the neck, which he had at first attributed to some local disease, probably of the bones, and Dr. Ferrier had come to the same conclusion; but, nevertheless, they found that the pain completely disappeared when her eyes were properly suited with spectacles. In considering the effects of lead, they must not forget that it had a definite effect on the cells of the cerebral cortex. It would be interesting to see if in some cases of epilepsy it could be removed by solvents, and the epilepsy thereby cured. When he had been working at the effects of the bromides, he had noticed that some German observers attributed all results to the potassium, and some to the bromine, and this had led him to try the effect of common salt on a number of epileptics. There were some good results, some failures; and he thought it possible that its use might arise from its causing the patients to drink more and wash out the cells of their brain. Dr. Haig recommended sodium benzoate, and he thought it would be worth while to try that along with potassium bromide.

Dr. W. H. White had noticed in Dr. Haig's tables that iron was represented as causing a greater retention of uric acid than lead. This retention, they were told, was the cause of epilepsy; but were there any cases of iron epilepsy to bring forward? Saturnine epilepsy he admitted was well known, and lunacy was another nervous effect of lead; was that produced by this retention of uric acid? And what effect had potassium bromide on this retention? If epilepsy depended on this poisoning of the system, he was surprised to find its effects beginning generally unilaterally.

Dr. Haig was much obliged for the favorable reception of his paper, but wished to deprecate any too sanguine expectations from its conclusions. He pointed out that migraine resembled epilepsy in so far that in both at the time of the attack the excretion of uric acid was increased. He had found some good results from the use of salicin in epilepsy. As to retention of uric acid, he considered it would be shown to be separate

from diminished formation. The local conditions, such as anomalies of vision, etc., he admitted might cause irritability and susceptibility to the uric-acid poison. The effects attributed to lead in the cortex of the brain might, perhaps, be due to combined lead and retained uric acid. In comparing the results of lead and iron, it should be noticed that the amounts of iron taken were much the larger. He had made experiments on the effects of potassium bromide on the retention of uric acid, but found no variation caused by it. Sir Alfred Garrod, twelve years ago, had shown that uric acid was in excess in the blood in epilepsy, and he hoped soon to be in a position to argue more generally from its excess in the urine to its excess in the blood.

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### *CASES TREATED WITH IPECACUANHA SPRAY.*

The ipecacuanha spray was originally introduced by Dr. Wm. Murrell for chronic bronchitis and other diseases of the throat and respiratory organs in consequence of the reputed success attending the use of a nostrum, in both London and Paris, by an irregular practitioner. Dr. Murrell reports a number of cases illustrating its effects in the *Med. Press and Circular* for April 25, 1888. It was difficult to obtain any clue to the composition of the secret remedy, as apparently the proprietor varied the constituents from time to time, in order to puzzle the analysts and escape detection. Some patients said that it was a clear colorless fluid like water, while others were confident that it was yellow, or red, or even blue. Some thought it was tasteless, while others declared they recognized the not unfamiliar flavor of dry sherry. They all agreed, however, that it was used in the form of a spray, and that its effects were little short of marvellous, a few inhalations affording prompt relief, both to the cough and shortness of breath. It always loosened the phlegm, and frequently gave rise to copious watery expectoration. It obviously belonged to the class of medicinal agents which we call expectorants, and, as there was no reason to suppose that it was a rare or unknown drug, the sphere of investigation was considerably narrowed, for many remedies were obviously unsuited for administration by this particular method. A number of preliminary trials were made, which speedily demonstrated that even if the specific were not ipecacuanha wine, that very useful drug entered largely into its composition, and that locally applied in the form of a spray it was capable of affording relief to congested and irritated bronchial mucous membranes. Sometimes the ipecacuanha wine, pure, or diluted with an equal quantity of water, was used with a small steam vaporizer, but more commonly the ordinary hand-ball spray apparatus, such as is employed for the production of local anæsthesia, was preferred. A solution in spirit, made of the same strength as the wine, was found equally efficacious. After a few visits the patient was usually taught how to use the apparatus himself. Most successful results are obtained from the employment of the ipecacuanha spray in cases of chronic bronchitis and bronchial catarrh. In fibroid phthisis there is often a marked improvement, even when no constitutional treatment is adopted. A single inhalation will sometimes restore the voice in cases of hoarseness due to congestion of the vocal cords. It is a matter of little importance whether the spray be given with a hand-ball spray apparatus or with a small steam vaporizer. In either case the spray must be warm, and the patient should not go out for some minutes after inhaling. Care should be taken to see that the spray really enters the chest, and is not stopped by the arching of the tongue against the wall of the mouth. The best results are obtained by using the spray for about ten minutes three or four times a day. In the majority of cases of winter cough relief will be obtained in ten days.

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### *NITROGLYCERIN IN AFFECTIONS OF THE HEART AND KIDNEYS.*

Nitroglycerin in moderate doses has in many cases proved very useful. Experiments made with this substance have shown that it reduces arterial tension, raises the action of the heart, and moderates the pulse. Under its influence the sounds at the apex become more sonorous, the face becomes red, there are alternate sensations of warmth and cold in the head and face. Its action is analogous to that of nitrite of amyl and nitrite of sodium. Most authors prescribe 1 per 1000 drops to begin with. Korczynski records a case of aortic contraction in which 30 drops of a solution of one per cent. were administered, but in other cases $\frac{1}{50}$ of a drop has determined morbid symptoms. M. Holst, who has lately studied the action of nitroglycerin, attributes these symptoms to individual reaction in different patients. He cites a number of cases in which he has

employed this substance, which proved efficacious in certain instances, but in others had no effect. He concludes that nitroglycerin has an energetic action on the innervation of the heart, but that it is only obtained when there is no organic lesion in the heart or aorta, or is only rarely observed in such cases. Dr. Holst cured a patient suffering from angina pectoris with nitroglycerin, but in this instance there was no organic affection of the heart. He believes that nitroglycerin might be employed with advantage in illnesses in which the heart is seriously weakened, and which have hitherto been treated with camphor, musk, etc. He does not regard this substance as a diuretic, although he has found that it increased the flow of urine in certain cases. This result he attributes to the increased action and regularity of the heart caused by nitroglycerin. It is impossible to prescribe fixed doses of nitroglycerin. Certain patients may take repeated doses of 6 drops with impunity, while with others 4 drops slacken the pulse to a considerable extent. Small doses should be administered at first, which may be gradually increased.—*Lond. Med. Recorder*, April 20, 1888.

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*ENDOMETRITIS TREATED BY DRAINAGE AND BY PACKING WITH IODOFORM GAUZE.*

At the meeting of the Practitioners' Society of New York, held April 6, 1888, Dr. Wm. M. Polk read a paper with the above title (*Medical Record*, May 12, 1888). He referred briefly to the usual methods of treatment of endometritis, which, while differing among themselves in many respects, had one point in common,—namely, that they were most unsatisfactory in their results. A consideration of the conditions present in endometritis should lead to the institution of a more rational therapy. In this affection there is an inflamed and suppurating surface lining a nearly closed cavity, and the conditions are almost exactly comparable to those present in an abscess with an opening of insufficient size for the free escape of pus. The discharge is retained in the cavity, bathing the already inflamed surfaces, keeping up the irritation, and preventing thereby any attempts on the part of nature to effect a cure. In the case of an abscess cavity with a small opening, the plain indications are to enlarge the opening, and drain away all the irritating discharges as rapidly as they are formed, and a similar mode of procedure should be equally effective in the analogous condition found within the uterus in endometritis.

The speaker had adopted this plan in a number of cases, and had been exceedingly well pleased with the results obtained. His cases were as yet few in number, and it would be premature to assert that all cases of purulent endometritis could be cured by this method; but it was, at least, rational in theory, and the benefit thus far obtained by its application was sufficiently striking to warrant its further trial. His plan was first to dilate the os, if necessary, in order to give exit to the pus. This could be practised in most cases without danger, unless adhesions were present. Then, if the indications called for it, he used the curette freely, and finally secured an efficient drainage by the introduction into the cavity of the uterus of a strip of iodoform gauze. Several cases, in which this method had been employed, were reported.

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*ACUTE PERITONITIS SUCCESSFULLY TREATED WITH SALINE PURGATIVES.*

At the meeting of the Midland Medical Society, March 21, 1888, Dr. Suckling (*Lancet*, May 12, 1888) showed a man, aged 21, who was admitted into the work-house infirmary on January 6, suffering from acute peritonitis. Three days before admission he was attacked with vomiting and pain in the abdomen; there was constipation. The abdomen was tense and tympanitic, and the abdominal respiratory movements were abolished. There was extreme tenderness above the abdomen; the legs were drawn up; the pulse small and frequent; the expression anxious. He had retention of urine and fever. No tumor could be detected in the right iliac fossa; vomiting was incessant, and pain about the umbilicus greatly complained of. Dr. Suckling thought that the peritonitis was set up by typhlitis, due to fecal retention. Opium and belladonna were first given, but the vomiting and pain continued. Then ½-drachm doses of sulphate of magnesium and sulphate of sodium, with 10 minims of tincture of belladonna, were given every four hours. Improvement soon followed this treatment, several liquid motions being passed. On January 9 the vomiting, pain, and tympanites had passed off, and a distinct fulness could be observed, with increased resistance to pressure in the right iliac fossa. The medicine was

continued, with the result that the motions became more and more solid till the 14th. He continued to complain of dragging pain in the abdomen for some time; but in about three weeks he was able to get up, and five weeks after his admission was allowed solid food. He has since had two or three slight relapses, which at once yielded to purgatives and proper dieting; and at the present time there is a distinct indurated swelling in the right iliac fossa. Dr. Suckling was of opinion that in this form of peritonitis, and in typhlitis due to fecal retention, saline purgatives in moderate doses and with plenty of water were of great value.

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*THE PROBLEM OF DISSOLVING URIC-ACID CALCULI.*

Ever since urinary calculi were first recognized, the attempt has been made to find some means of dissolving them in the body. The operation of lithotomy, though not particularly hazardous under favorable conditions, too often hastens death to be attempted when milder means will cure. The brilliant experiments in the laboratory as to the solubility of calculi at first led physicians to believe that their removal was a very simple matter, but, unfortunately, clinical experience in no way justified this inference, and as time went on the prevention and dietetic treatments were the only ones in use.

Dr. C. Posner and Dr. H. Goldenberg (*Zeitschrift f. Klin. Med.*, 1888, xiii. H. 6), however, not willing to be discouraged at the hitherto unsuccessful task, have endeavored to study this subject anew, hopeless as it may seem, and in the first series of experiments they confined their attention to the most important constituent of all calculi,—viz., uric acid,—and to a study of the different alkalies which are well-known solvents of these calculi.

At the instigation of Ebstein, Jahns (*Archiv d. Pharmacie*, vii., 1883), in Göttingen, studied this subject, but he made the mistake of forgetting that substances, however capable of dissolving uric-acid calculi outside of the body, underwent great changes in their passage through the body and often lost their effect. As an example of this is given the carbonate of lithium, which ordinarily forms with uric acid the most soluble compound, while, when taken internally, it appears in the urine, in combination with chlorine, as the chloride of lithium, a most insoluble substance.

Emil Pfeiffer and F. Bergmann (*Verhand. d. V. Congr. f. in Med.*, Wiesbaden, 1886, S. 444) came nearer to the clinical aspect of the question when, instead of using the mineral waters themselves, they took the urine passed after the use of the mineral waters, at the same time taking into consideration the individual peculiarities of the individuals themselves. Posner and Goldenberg followed the method of Pfeiffer, by taking two hundred cubic centimetres of filtered urine from individuals to whom had previously been given one of the drugs or mineral waters supposed to dissolve the calculi. This urine was passed through a filter containing a known quantity of chemically pure uric acid. At the beginning of these experiments they took two hundred cubic centimetres of "normal urine,"—that is, urine from one individual to whom none of these drugs nor mineral waters had been given. These two hundred cubic centimetres of normal urine were passed through a filter containing a known quantity of chemically pure uric acid, and, after the uric acid had been weighed, it was found not only not to have lost by the filtering action of the urine, but even to have slightly increased in weight, the normal urine exerting no solvent action on the uric acid.

After experimenting with a number of alkaline mineral waters, among which were Vals and Vichy (Grand Grille), and also with such drugs as the bicarbonate of soda; Cantani's alkaline powder, consisting of bicarbonate of soda; effervescing carbonate of lithium and citrate of potash, the carbonate of lithium, borax, the boro-citrate of magnesia, and a remedy called "litholydium," they found that these remedies, although not having exactly the same effect on the urine, made it less acid or even alkaline, increased its amount, and, *pari passu*, decreased its specific gravity. The conclusion seems to be that the bicarbonate of soda deserves the lion's share of the success, and the two most beneficial mineral waters, Vals and Vichy, are richest in sodium. The other effects of this treatment—namely, the increase in amount and decrease in specific gravity—are not to be left unconsidered. The solvent power of the urine increases with its lessening specific gravity, and the large quantity washes out and dissolves the small gravel. Experience showed that such waters as Vals or Vichy were more powerful than twice the quantity of a water one-half as effective,—*i.e.*, that the concentration was important. Also the mineral waters were much better than the salts contained in them and taken in the same doses, for the effect was

most marked when the urine was slightly acid or neutral, intense alkalinity of the urine causing a precipitation of the almost insoluble salts and earths; the mineral water containing free as well as combined carbonic acid, a slightly acid or neutral reaction was easily maintained.

Now, what can be deduced from the above experiments for the benefit of our patients? There are cases of the uric-acid diathesis where deposits may be formed in the kidneys, leading to attacks of gout. If it is a question of an acute attack, then the most powerful means should be used, as Vichy and Vals water. Unfortunately, the waters of these springs are not always accessible, and often expensive, and so a resort to the bicarbonate of soda, in doses of from fifteen to seventy-five grains a day, taken in divided doses in large quantities of effervescing water, is often advisable. The next best thing is Cantani's effervescing powder or the carbonate of lithium. In the more chronic conditions, and in the interval of an attack, the weaker mineral waters, or such drugs as the boro-citrate of magnesia or borax, are to be recommended. Too long use of Cantani's powder is not to be advised, on account of the lithium and potash contained in it.

In the whole treatment it is necessary to control the reaction of the urine as far as possible, and not let it get too alkaline. The difficult thing is to completely dissolve large calculi. Such a thing is possible, but almost more difficult in proportion to the surface exposed to the volume of the stones. Ebstein seemed to think that the effect was principally due to the flushing action of the increased quantity of urine, but Posner and Goldenberg are convinced that the mineral water or drug in medium doses is borne well and exerts a favorable solvent action on these calculi. These experiments are certainly very valuable, and the treatment is one to which all patients will willingly submit. The dangers of using mineral waters in excess have of late been pointed out, and these should be considered in the treatment.—*Med. Record*, March 17, 1888.

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### *CYANIDE OF MERCURY.*

Some remarkable results in the treatment of diphtheria with cyanide of mercury are reported from Sweden (*Lancet*, March 24, p. 591). Dr. Selldén, a provincial medical officer, affirms that since the year 1882 he and his colleagues have treated fourteen hundred cases of diphtheria with cyanide of mercury, the fatal cases being only sixty-nine, or 4.9 per cent., while the official returns show that four years previous to this treatment being introduced there were five hundred and twenty-three deaths in the district out of five hundred and sixty-four cases, or a mortality of 92.7 per cent. The formula recommended is: Cyanide of mercury, 2 centigrammes ($\frac{3}{10}$ grain); tincture of aconite, 2 grammes (32 gtt.); honey, 50 grammes (about 13 drachms). Mix and give a teaspoonful every fifteen, thirty, or sixty minutes, according to the patient's age. No brushing of the throat is practised, but a 1 in 10,000 solution of cyanide of mercury in peppermint-water is used every fifteen minutes as a gargle. Dr. Selldén suggests that by the administration of the cyanide in frequently-repeated small doses the body rapidly becomes so impregnated with mercury as to be intolerant of the diphtheritic bacilli.—*Pharm. Journ. and Trans.*, March 31, 1888.

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### *THE TREATMENT OF SPINAL ABSCESS.*

At a meeting of the Harveian Society, held May 3, 1888, Mr. Watson Cheyne read a paper on the treatment of spinal abscess (*Lancet*, May 12, 1888). In these abscesses the contents, the wall, and the lesion of bone from which they start are to be considered, although the latter cannot always be made out. Three types of tubercular disease were described: (1) Tubercular cavities containing soft cheesy material; (2) tubercular sequestra, either unseparated or in cavity lined with tubercular granulations; and (3) superficial caries of bone. Curvature is commonest in the first class, but the last is the most extensive, and is chiefly found in adults accompanied with abscess. The contents of these abscesses is not true pus, but broken-down cells and tissues floating in a variable amount of fluid. This fluid produces, when inoculated, tuberculosis in guinea-pigs. The pyogenic organisms take no part in the production of the chronic abscesses, but grow freely in their unexhausted contents, and therefore the entrance of putrefactive ferments into their cavities causes septic intoxication and chronic osteomyelitis of bone. Two methods of treatment were considered,—one in which the abscess was cured without opening it, and by the injection of iodoform and glycerin, or iodoform dissolved in ether; and the other method, by antiseptic opening. Statistics of fifty-six cases were given, of which 73.2 per

cent. healed and 12.5 died. These were mainly psoas abscesses, but dorsal, lumbar, and cervical were included. Cases were most numerous between twenty-eight and thirty years of age. The cases in which septic infection of the wound occurred were discussed, and their causes pointed out. The average time of healing was from eight to nine months. The abscesses should be opened as soon as possible, as the chances of absorption were small. The best place for opening was either the lumbar region or near the anterior superior spine. Finally, stress was laid on the fact that the patient was suffering from disease of the spine.

MR. LOCKWOOD said he considered the spinal lesion of the most importance, and the abscess but an accident added to it. Rest in the prone position frequently was followed by anchylosis and cure. He wished to know whether Mr. Cheyne had experience of cases in which rest had been maintained and the abscess left alone. Also whether all the cases were to be considered tubercular because their contents produced tuberculosis in guinea-pigs. The question was also raised as to the occasional origin of the disease in the intervertebral disks. The length of time taken by the abscesses to heal was an indication of the progress of repair in the spine.

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### *CHLORAL HYDRATE AND POTASSIUM CYANIDE.*

Attention has been called by MESSRS. BLAREZ and DENIGÉS (*Bull. Soc. Pharm. Bord.*, February, p. 46) to an interesting reaction observed in dispensing a prescription ordering chloral hydrate and potassium cyanide together in an ointment. It was found that when equal weights of these two compounds were powdered in a mortar and mixed, after an interval varying from half a minute to three minutes, effervescence occurred in the mass, which became yellow and then brown, hydrocyanic acid being given off freely. It was also found that when the ingredients were present in other than equal proportions the reaction took place less quickly, but that the retardation was greater when the potassium cyanide was in excess than when the chloral hydrate preponderated. The intervention of water or alcohol also retarded the reaction in proportion to the quantity added until a certain amount of stability was attained, when the relation of the liquid to the solid was five to one, but even dilute solutions were decomposed when boiled. In contact with large amounts of chloral the decomposition commences at once, so that such an ointment would be an improper preparation. If such a composition be really desirable, it is suggested that a solution should be prepared, not stronger than one in ten, by adding the chloral hydrate and the potassium cyanide to the water separately. In the reaction which takes place dichloracetic acid, hydrocyanic acid, and potassium chloride are formed.—*Pharm. Journ. and Trans.*, March 31, 1888.

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### *RECENT GERMAN LITERATURE OF CHRONIC GASTRIC DISEASES.*

The recent literature of this still unsettled department of medicine has been lately ably reviewed by DR. BOAS in the *Berliner Klin. Wochenschrift*, Nos. 6 and 7, and the views of the partisans interested in the question are fairly rendered. It appears that the Congress für innere Medicin afforded opportunity for reopening the much-disputed question of the absence of free hydrochloric acid from the stomach when there is cancer of that organ. This absence has been asserted by so many clinical observers for many years now that it has become a point of great importance. Cahn at the above-named Congress remarked on the unreliability of our present rough tests for HCl compared with the titration method, which never failed to give indications of the presence of HCl. The failure of color-tests to reveal HCl depends, in his opinion, upon the accumulation of the products of digestion and the loss of "eliminative activity." This failure, however, is not constant, for Cahn himself has reported a case of hypersecretion of acid in pyloric cancer. Riegel, Von Noorden, and Sticker hold out for the value of the determination of the presence or absence of HCl in the diagnosis of cancer. Moreover, Von Noorden and Honigmann (*Zeitschr. f. Klin. Med.*, Bd. xiii. H. 1) find that the HCl residue, always found to be present even in cancer when the titration method is employed, is due not to free HCl, but to combinations of the latter with albumens. They therefore uphold the value of the color-tests. But another difficulty arises, inasmuch as many observers have proved that HCl may be constantly absent in chronic gastric catarrh also, as well as in atrophy of the gastric mucous membrane. Jaworski and Gluzinsky have reported such cases, also Boas (*Deutsche Med. Wochenschr.*, 1887, Nos. 24–26), and Grundzach (*Berliner Klin. Wochenschr.*, 1887, No.

30). The latter observer found that HCl was constantly absent from the stomach in five out of more than a hundred non-cancerous persons. Wolff and Ewald (*Ibid.*, No 30) strike a still stronger blow against the theory that the absence of HCl from the stomach is pathognomonic of cancer. In eight persons —some quite healthy, others with only slight gastric disturbance—they found that free HCl was constantly absent, and even the administration of this acid made no difference.

Turning now to the color-tests of HCl, of which there are a great many, Congo-red is declared by Riegel to be a perfectly satisfactory preliminary test; Günzburg advocates phloroglucin-vanillin; and Boas prefers tropæolin paper. But here, again, there is a great disagreement, for Günzburg maintains (*Centralb. f. Klin. Med.*, 1887, No. 40) that the usual color-tests—namely, gentian violet, tropæolin, and Congo-red—are affected by the organic acids also in various degrees of concentration, and Boas specifically states that a .03 per cent. lactic-acid solution will cause a weak but distinct blue in Congo-red paper. Arlt (*Ibid.*, 1888, No. 3) and Kuhn (Inaug. Diss. Marburg, 1887) argue that this is only true for a watery solution, but Boas replies that the objection is superfluous, as he only referred to free lactic acid. Boas has had a tropæolin paper prepared which discriminates between HCl and lactic acid, and is declared to be highly satisfactory as to cheapness, simplicity, and distinctness of result. A percentage of HCl even below .05 is easily recognized thus, and the presence of even five per cent. of organic acids makes no difference. Moreover, the degree of coloration with HCl affords an indication of the quantity of the latter present. Günzburg's test is also extremely sensitive and reliable, but less simple. Two parts of phloroglucin and one of vanillin added to thirty of absolute alcohol give a yellowish-red solution. One drop of this in contact with a trace of a mineral acid gives a fine red coloration, red crystals being precipitated. Organic acids, even when concentrated, do not affect this test. In using it, a few drops of a filtrate of the gastric contents (usually obtained by a sound) are mixed with as many of the test-solutions, and the mixture is carefully evaporated over a small flame; a bright red color appears at the margin of the liquid. The test indicates up to $\frac{1}{10}$ per mille of HCl. Or a drop or two of the test-solution may be added to a few drops of the unfiltered stomach-contents on a strip of paper. On well warming over a flame the red spot indicating HCl appears; it is not affected by ether. As before said, the absence of HCl in gastric cancer cases is attested by so many different observers as to make this sign of importance diagnostically, notwithstanding that a few cases to the contrary are cited, besides many negative cases,—that is, cases in which HCl was found to be absent, but in which no cancer was present.

Next in interest to absence of HCl comes hyperacidity of the stomach. This condition is associated with hypersecretion of gastric juice, according to Boas, who argues that (1) chronic hypersecretion without hyperacidity has never been observed; (2) the subjective symptoms are not the result of excess of the gastric juice, but of its abnormal acidity; if this is removed they at once cease; (3) in general the two conditions go together, increasing and diminishing *pari passu*. The amount of acid juice in a fasting stomach must be about one hundred cubic centimetres to constitute hyperacidity, according to this observer, who lays great stress on the quantity. Riegel and his disciples, on the other hand, maintain that the two conditions are to be entirely separated from each other; Honigmann, in particular (*Münch. Med. Wochenschr.*, 1887, No. 48), states that there is no connection between them; but both Riegel and Reichmann (*Berlin. Klin. Wochenschr.*, 1887, Nos. 12–16) allow that there are transitions.

Taking hypersecretion apart from hyperacidity, Reichmann, who has carefully studied this subject, distinguishes continuous from periodical hypersecretion. The latter is a symptom of derangement of either the central nervous system (tabes), or the whole nervous system (neurasthenic dyspepsia, hysteria), or else is due to local disturbance of the secretory nerves of the stomach. The *crises gastriques* of Charcot, the periodical vomiting of Leyden, and the gastroxynsis of Rossbach come under this category. The typical hemicrania and periodicity point to a central cause, and not to mere irritation of the stomach from accumulation of juice in the fasting condition, as Reichmann would have it. In such cases the acidity is lower than the normal. As to continuous hypersecretion, this is a condition quite unexplained as yet, for it is no explanation to say that there is "increased irritability," and "lessened absorption" is not a constant accompaniment of this state.

We come now to the etiology of hyperacidity of the gastric juice, a condition occupying the foreground in recent investigations.

Riegel has constantly found an excess of acid when chronic ulcer of the stomach is present, and maintains that the latter is due to hyperacidity *per se*. The frequency of this coincidence, though it is not absolutely constant, is asserted by so many other observers—Ewald, Korczynski and Jaworski, Van der Welden, Rothschild, and others—that it may be regarded as established. Again, Decker, working in Leube's clinic, has made experiments on dogs by injecting small quantities of hot fluids into the stomach (*Berlin. Klin. Woch.*, 1887, No. 21); in one case an extravasation was produced between the mucous and muscular coats, the mucosa being intact; in another case two typical round ulcers were caused close to the pylorus. Decker thinks that the continual ingestion of hot substances (including liquids) is the most frequent cause of ulcer, and cites a case in support of this. Ritter has experimented on animals in another way,—namely, by direct injury to the gastric mucous membrane (*Zeitschr. für Klin. Med.*, Bd. xv. H. 5, 6), but lesions so caused heal too rapidly, as Cohnheim has shown, to allow of any inference from them to chronic ulcer in man. Ritter and Hirsch have recently asserted that hyperacidity is by no means so common in gastric ulcer as has been supposed (*Ibid.*, Bd. xiii. H. 5), for they found this condition only twice in five cases of ulcer; and Boas has seen two cases with all the symptoms of ulcer, but with normal acidity; these cases, however, he declares are exceptional. The test meals selected by Ritter and Hirsch—namely, egg and milk—are said to be unsuitable for ascertaining the acidity of the gastric juice, as being highly albuminous; starch is the proper food for this purpose, as the results of Ewas, Sticker, and Boas prove.

As to the final results of excessive acidity, Jaworski (*München. Med. Wochenschr.*, 1887, No. 7) has followed up several cases of round ulcer, and found that after several months the formation of acid ceased altogether. Boas observed the same result in dilatation of the stomach, but observes that such cases are exceptional, and the aim of treatment must be not the prevention of the gastric secretion, but its regulation.

As to atrophy of the gastric mucous membrane, Ewald, Lewy, and Boas have published cases. The latter mentions sharp radiating pains in the epigastrium as important in the diagnosis, also absence of coagulating ferment (besides absence of hydrochloric acid and of pepsin). (See *Berliner Klin. Woch.*, 1887, No. 4; *Münchener Med. Wochenschr.*, Nos. 42, 43.)

Ewald and Sievers have used salol in the diagnosis of dilatation, as this substance passes unaltered through the stomach (*Therap. Monatsh.*, August, 1887). The presence of salicylic acid in the urine was ascertained in about twenty or thirty minutes after giving salol, and at the latest after an hour, so that its absence for a longer period than this would indicate dilatation of the stomach (from pyloric stenosis). The appearance of salicylic acid in the urine was hastened by faradization of the gastric region. But Sahli throws a doubt upon the certainty of the salol test by his assertion that fission-fungi can decompose salol,—in other words, that fermentative changes in the stomach may cause the destruction of salol within that organ. But such changes always require a considerable time.—*British Medical Journal*, April 14, 1888.

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### *THE TREATMENT OF TONSILLITIS BY SALICYLATE OF SODIUM.*

The salicylate of sodium has been used by Mr. A. Hillaby (*Practitioner*, April, 1888) in a large number of cases of acute tonsillitis, and so far it has come up to his best expectations. The fever, which is not inconsiderable in many cases (103° F.), is speedily reduced, the action of the skin promoted, the resolution of the inflammation in the throat hastened, and the formation of tonsillar abscess averted. His plan of treatment is as follows: Open the bowels freely with a good dose of Mistura Sennæ comp., put the patient on milk diet, and administer the following draught:

℞ Sodii salicylatis, gr. x–xv;
Tincturæ aurantii corticis, ♏x;
Aquæ, ad. ℥i. M.
Fiat haustus, quartis horis sumendus.

When the inflammation in the throat begins to subside, reduce the dose of salicylate and continue to give it in smaller doses for a few days after all throat-symptoms have disappeared.

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### *SANTONIN AS AN ANTHELMINTIC.*

It is well known that santonin does not kill ascarides, but rather increases their movements. W. von Schroeder noticed this increase of movement, which frequently resulted in the speedy expulsion of the animal, and considers that the therapeutical value of the drug depends upon it. Fr. Coppola, in

the *Archivo per le Scienze Mediche*, vol. ix. fasc. 3, describes this movement, which was observed in man as well as in animals, as a rhythmic, convulsive motion, which frequently lasts for days, and makes it impossible for the worms to withstand the peristaltic movement, especially if a laxative should have been given, while animals unpoisoned by the drug are able, by means of snake-like undulations, to keep their place in the bowels. The direct action of the drug was observed by Coppola in experiments on pigs. The animals, after fasting for some time, were treated for two days with 19 grains of santonin. No worms were passed, and on the third day the pigs were slaughtered. Ascarides were found in the small intestine; they all showed the convulsive movement described by Von Schroeder. Coppola does not advise that a laxative should be given immediately with the drug, but after one or two days of treatment with santonin.

Cannizzaro has found several derivatives of santonin, one of which, santoninoxim (obtainable through the action of hydroxylamin in alkali solution), Coppola has experimented with and found to be anthelmintic. It is crystalline, able to bear light, insoluble either in water or in the gastric juices, soluble, however, in fats and oils, does not react with soda; with caustic alkalies gives the same reactions of color as santonin. It is not so dangerous a drug as santonin, and in man is claimed to be equally as efficacious as the former.

The dose for children between 2 and 3 years may be about 1 grain; the dose for adults, 4 grains. This should be given twice daily, with an hour between the doses, and the treatment continued for two or three days without any laxative being given.

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### *CHLORIDE OF IODINE AS AN ANTISEPTIC AND DISINFECTANT.*

Dr. Carl Langenbuch, of Berlin, in recognizing the great value of chloruretted water as a disinfectant, set about to find a preparation which at the moment of its use would give off chlorine. Langenbuch experimented with numerous combinations of chlorine, and among others chloride of iodine, and found that it was a powerful disinfectant, and at times an antiseptic. For surgical use a watery solution of trichloride of iodine (1 to 1000 or 1 to 1500) was most valuable. The danger of poisoning with such a solution is even less than that of carbolic acid or bichloride in solution. This has been proved by Langenbuch by a series of experiments upon animals. Langenbuch has used trichloride of iodine in one hundred operations, among which were several amputations of the thigh, resections, extensive bone and joint operations, numerous growths of all kinds, etc. The drug always gave perfect satisfaction. Langenbuch expresses the hope that his colleagues may test the drug for themselves in all cases where the action of carbolic acid or sublimate is open to suspicion or doubt.

At the conclusion of his article (*Medicinisch-Chirurgische Rundschau*, February, 1888) Langenbuch states that tablespoonful doses of a 1 to 1200 to 1 to 1500 solution of trichloride of iodine, given internally, every two hours, act most beneficially in cases of dyspepsia which owe their origin to the presence of bacteria. Also a 1 to 1200 solution proved to be a valuable injection in gonorrhœa.

The formula of trichloride of iodine is $ICl_3$, and is composed of 54.39 per cent. of iodine and 44.61 per cent. of chlorine. It is prepared by allowing dry chlorine gas to act upon iodine until the latter has changed into a crystalline body of a yellow color.

The preparation, as it comes into commerce, is a deep yellow powder, which is put up in closed glass tubes, containing about four to five ounces each.

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### *THE TREATMENT OF SYPHILIS WITH OXIDE OF MERCURY.*

Rosenthal uses the following as an injection in syphilis:

℞ Hydrargyr. oxid. flav., gr. viii;
Ol. olivar., ʒv.

With this preparation an injection was made every week. A Lewin's syringe was used and a long needle. The syringe in question holds about thirty-two minims. Usually half this quantity was injected, but in severe cases three-quarters and sometimes even a whole syringeful was given, so that the dose of oxide of mercury ranged from ½ grain to a little over 1 grain. From three to five injections in all were made in each case. The spot selected for the injection was the gluteal region. The injections were always intra-muscular, and carried out with strict antiseptic precautions. After the injection gentle massage was always used. In no case was the formation of an abscess

observed. There was, however, considerable infiltration of the surrounding tissues, accompanied by some swelling. This was usually noted on the second day, but disappeared soon after. The pain caused by the injections was far less than that which Rosenthal had observed to follow the use of insoluble salts of mercury. This form of administering mercury is spoken of most highly by various authorities, and may be recommended as one of the safest if not the best method for mercurial treatment.—*Centralblatt für Therapie*, March, 1888.

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### *THE TREATMENT OF DIPHTHERIA.*

In the *Meditz. Oboz.*, No. 24, 1887, p. 1123, Dr. Miron M. Lichtermann, of Berezovka, Kherson government, emphatically recommends the following plan of treatment, which he has employed with satisfactory results in about three hundred cases of this formidable disease. Having been called to a diphtheritic patient, the writer selects the best room in the house, and disinfects it by means of chlorine gas, evolved from chlorinated lime and muriatic acid. An hour later he ventilates the room, and then removes the patient into it. The treatment begins with a tepid (30° C.) foot-bath of fifteen minutes' duration, about two tablespoonfuls of mustard flour being added to water. After the bath the patient is wrapped up in blankets to perspire for two or three hours. The bath is repeated every evening. At the same time there are used,—1, *locally* (*a*), a solution of salicylate of sodium (two drachms) in glycerin (four drachms), to paint the throat four times a day; and (*b*) a solution of chlorate of potassium (two drachms) in distilled water (six ounces), to gargle the throat freely every half an hour; and, 2, *internally*,—Focke's and Heyder's formulæ,—(*a*) a "white mixture," consisting of chlorate of potassium (one drachm), distilled water (six ounces), and simple syrup (one ounce), to take a tablespoonful every hour for an adult; and (*b*) a "red mixture," consisting of muriatic acid (forty-eight fluid grains), distilled water (six ounces), and raspberry syrup (one ounce), to take a tablespoonful hourly for an adult. The patient takes a dose of the "white mixture," and immediately after a dose of the "red" one, every hour, day and night. The dose for a child under two is 1 teaspoonful of each mixture; for a child between two and four years, ½ a tablespoonful. The room and the patient are "sprayed" over with a three per cent. solution of carbolic acid four times a day. The patient discharges his sputa, etc., into a vessel containing a five per cent. carbolic solution. Under this treatment the temperature is said to return to a normal level in about twenty-four hours, while the faucial pseudo-membranes disappear, leaving no trace after eight paintings (that is, in forty-eight hours). The results which have been obtained from the method sketched above are as follows: Up to April, 1886, Dr. Lichtermann had been treating his numerous diphtheritic patients after all other possible plans recommended in international literature, the mortality ever keeping up to about forty-five per cent. From April, 1886, to October, 1887 (*i.e.*, during eighteen months), he met at Berezovka (a veritable nest of diphtheria in the shape of a deep, damp, always foggy, and muddy valley, surrounded by high hills and supplied with a polluted water-supply) as many as two hundred and thirty-seven cases of the disease, including sixty-eight severe cases of gangrenous variety, and treated them after the plan recommended. Only four (that is, only about 1.7 per cent.) died. In October, 1887, he was invited by the authorities to stamp out a diphtheritic epidemic which had broken out in a neighboring town. Up to October 15 he had under his care fifty-seven cases, eight of which (fourteen per cent.) ended fatally. All these eight patients had fallen ill about five days before the arrival of the writer. Dr. Lichtermann attempts to explain his striking success by the following hypothetical admissions: 1. Under the influence of diaphoresis (foot-baths) the patient's blood becomes more concentrated or richer in salts, and hence less suitable for the growth of pathogenic microbes of diphtheria (*cf.* Wachsmuth's "Die Diphtheritis-Heilmethode," Berlin, 1886). 2. Under the influence of an internal and external use of chlorate of potassium, such an inspissation of the patient's blood increases still further, and that in a considerable degree. 3. Under the influence of a combined use of the chlorate and hydrochloric acid, a free chloro-chloric acid is formed, which, in a nascent state, develops a powerful oxidizing and parasiticide action (*cf.* Focke's paper in the *Centralbl. für Klin. Med.*, No. 35, 1886; and Heyder's, *ibid.*, No. 11). [Dr. Lichtermann does not mention anything about the average duration of his treatment. Neither does he say whether he happened to observe any accessory unwelcome effects of so free a use of chlorate of potassium. Meanwhile this point has a para-

mount practical importance, since it can be regarded now as an established scientific fact that the drug represents a fairly powerful poison whose therapeutic use requires the utmost caution. In fact, the dangers of the chlorate are so great and so obvious that some eminent modern clinicists—among them Professor V. A. Manassein, of St. Petersburg—recommended "to altogether discontinue any internal administration of the drug, for, generally speaking, there do not exist any serious or firmly established indications for its use in this way." See the *Provincial Med. Journal*, March, 1888, p. 135, where a short retrospect of the toxicological literature concerning chlorate of potassium may be found.—V. IDELSON, M.D.]—*London Medical Recorder*, April 20, 1888.

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### *THE TREATMENT OF SPERMATORRHŒA WITH ELECTRICITY.*

The treatment of spermatorrhœa with electricity is largely adopted on the Continent, and generally considered to be most efficacious. Opinion is, however, divided as to whether the galvanic or faradic current is most valuable, and whether the form of treatment should differ in different types of the disease. RICHARD WAGNER, of Blankenburg, says the *Medicinisch-Chirurgische Rundschau* of February, 1888, tells of ten cases of spermatorrhœa in which he has used electricity. Three of these were not at all improved by the treatment. He is of the opinion that the faradic current is of special value in cases where the spermatorrhœa has resulted from sexual excesses, especially onanism, and when there exists a general excitable state of weakness. In such cases Wagner considers a local application of the current to be contraindicated, as it is not a question of treating local irritation so much as general over-excitability of the whole nervous system.

In cases where inflammation of the prostates or ejaculatory glands exists,—viz., from gonorrhœal origin,—a local application of the current is the only means by which satisfactory results can be obtained.

The anode (+) should be placed on the lumbar vertebræ, the cathode (—) at the base of the organ, at the symphysis or perineum.

The electric treatment should in all cases be an accompanying one, as without constitutional treatment but little improvement can be looked for.

### *HYPODERMIC INJECTIONS OF MERCURY IN SYPHILIS.*

DR. O. ROSENTHAL (*Centralblatt für Therapie*, March, 1888), in speaking of the value of the hypodermic use of mercury in the treatment of syphilis, says:

1. The method employed is a thoroughly trustworthy one, and one which any practitioner may resort to without fear.

2. The principal points of value of this method, which make it superior to other methods of administering mercury, are its efficacy, its handiness, its cheapness, its cleanliness, and the exactness with which one may administer any dose.

3. The soluble salts of mercury generally have the advantage of being less painful than others, but also have the disadvantage of being eliminated much sooner than others. The insoluble salts are much less rapidly absorbed, and therefore have also a greater action. If the last named be used, the number of injections will not require to be so great as if the soluble salts were used. Among the soluble salts of mercury the bichloride (sublimate) stands at the head, and among those which are insoluble, calomel and the yellow oxide of mercury. The best form of using the latter two as injections is suspended in oil.

4. By experiment the gluteal region has proved to be the most advisable place for the injection.

5. The intra-muscular injections have proved to be far less painful than the hypodermic ones. This is the case whether soluble or insoluble salts are used.

6. After the injection of insoluble preparations it will be advisable to use gentle massage.

7. If the injections are made with antiseptic precautions the danger of the formation of abscesses can be completely avoided.

8. This method is particularly adaptable to men; in women, who are naturally more sensitive, it should be but seldom resorted to, and in children only when the internal use of calomel is contraindicated, or when threatening symptoms demand rapid and powerful measures.

M. BENDER, in writing on the same subject as the above in the *Centralblatt für Therapie*, March, 1888, speaks of the results which he has obtained from oily injections of calomel as "brilliant." He not only recognizes in calomel a most invaluable form of a substance which has no equal in the treatment of syphilis, but also holds that injections of calo-

mel suspended in oil are the most rational and practical means of administering the drug.

In a long article on the subject, Dr. Bender also gives tables which show that in fourteen cases in Dontrelepont's clinic, who were given seventy-eight injections, three cases of stomatitis were observed, but never any abscesses, neither was there any infiltration. Again, among twelve patients in the polyclinic, who were given thirty-six injections, four cases of stomatitis and one case of infiltration were observed.

Bender also used Lang's "oleum cinereum,"* which has recently been introduced into the treatment of syphilis, but found that a simple suspension of calomel in oil was less painful, and was not necessarily followed by infiltration of the surrounding tissue, which injections of the former were almost sure to cause. A table showing the result of the use of the former is given. It is as follows: Out of twelve patients four cases of stomatitis and one abscess, and infiltration after almost every injection (one hundred and fifteen).

M. Bender cites numerous cases, and gives several tables which go to show the efficacy and value of this form of mercurial treatment. He claims that it might become a universal method of administering the drug in all cases, were sufficiently minute injections given.

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### *CREASOTE IN LARGE DOSES.*

Since Gimbert and Bouchhardt published their experiences with creasote in phthisis ten years ago, Dr. C. M. Hopmann has been treating similar cases with creasote and tincture of enzian (1 to 2) in gradually increasing doses of 10, 20, 25, 30 drops, given three times a day. Hopmann's average dose was, therefore, about 1 minim, and in some cases nearly 2 minims. Sommerbrodt gave ½ minim to 7 minims as his average dose, and lately has given as much as 12 minims. As Hopmann treats all ulcers of the larynx locally, he does not venture to assert whether it was creasote or the local treatment (cauterization with nitrate of silver) which caused the healing of the ulcers. In advanced laryngeal and pulmonary consumption creasote was found to be a palliative, which is superior to narcotics. In cases where diarrhœa accompanied the consumption the remedy always failed him. However, in cases of blood-spitting, cheesy degeneration, and shrinking of the lung, a continued use of the drug is strongly advisable. The drug seemed to relieve the stomach and bowels, and in this way allow flesh to be gained. Also in suspicious bronchitis of children, and in hardening of the glands and eczema, the drug was given with apparently good results. The drops, well diluted in lukewarm water, seemed to be endured better than the capsules; these Hopmann only gives when the drops give rise to irritation of the throat. The washing of the mucous membrane of the mouth, pharynx, larynx, and œsophagus with creasote is desirable on account of its antiseptic properties. This, of course, cannot take place when capsules are administered. Then, again, the cheapness of the drops, compared with the high price of the capsules, is another decided point in their favor.—*Medicinisch-Chirurgische Rundschau*, February, 1888.

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### *THE TREATMENT OF TONSILLITIS BY SALICYLATE OF SODIUM.*

Mr. Charles Grabham (in the *Practitioner*, May, 1888) confirms the testimony of Mr. Hillaby, already given to the readers of the Gazette, as to the value of salicylate of sodium in the treatment of tonsillitis. Mr. Grabham states that he has treated more than one hundred cases of it, and in the great majority speedy resolution has taken place; in most of these cases which went on to suppuration the remedy had either not been given early enough or the doses not large enough or given with sufficient frequency. In incipient cases, especially those occurring in gouty or rheumatic persons, the drug acts like a charm. He gives to an adult from 10 to 20 grains every two hours, or 10 grains every hour until relief is afforded, and then the dose is gradually reduced. All astringent gargles are avoided and the patient directed to use hot milk, or, when the breath is very fetid, warm gargles of permanganate of potassium or hyposulphite of sodium. In cases where the patient has had several attacks of the disease small doses do no good at all, and even larger ones sometimes fail. Mr. Grabham likewise states that bicarbonate of sodium, in doses of from 10 to 20 grains every two or three hours, appears equal to the salicylate of

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* Lang's formula is as follows:

℞ Purified mercury, 5 parts;
Fresh lard,
Olive oil, each 5 parts. M.

Two parts of this salve are rubbed up with three parts of olive oil; the oleum cinereum, therefore, contains about twenty per cent. of mercury.

sodium in subduing the inflammatory action and preventing suppuration, besides being free from the tendency of salicylate of sodium to produce tinnitus, vertigo, and deafness.

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*PROFESSOR SÉE ON DIGESTION.*

In a lecture on the modern notions of digestion and alimentation (*Lancet*, May 5, 1888), PROFESSOR GERMAIN SÉE treated of the nutritive value of *bouillon*, or broth, and his conclusions may be summed up as follows: 1. The quantity of albuminates is always very feeble, and it is the less so when the meat has been slightly boiled. The broth, therefore, conveys but very little of the albuminates to the organism, as the greatest portion remains in a coagulated state in the meat. 2. The gelatin contributes but indirectly to the reorganization of the system; it may, in decomposing itself, produce heat. It serves particularly to protect the corporeal albuminates, which would be more readily consumed in their absence, but they do not regenerate the tissues of the body. 3. A small quantity of carbohydrates is found in broth. The glycogenic matter, the inosite, the sugar, and the lactic acid which are met with in fresh meat, soon undergo profound alterations. It may be supposed *a priori*, as observed by Brücke, that the glycogen is transformed into sugar, and that the sugar itself undergoes transformation into lactic acid; but M. Sée remarks that the lactic acid of muscle is not identical with that of the fermentation of sugar; the first turns the plane of polarization to the right; lactic acid has no optical character. 4. Among the organic substances may be still added certain quaternary products, creatine, creatinine, and carmine, but the physiological action of which is little understood. 5. The saline matters play a *rôle* much more considerable; the phosphoric acid which is met with in the broth contributes to the consolidation of the osseous system; the chloride of sodium abounds in the liquids, and it is to the chlorides as well as to the phosphates that has been attributed the nutritive value of *bouillon*, or broth, which, after all, is only a saline solution. Professor Sée concludes that all physicians, all persons healthy or sick, readily recognize in broth a comforting effect, and they certainly would not substitute for it a warm solution of the phosphate of potash and kitchen salt. M. Sée does not pretend to explain in what consists the virtue of broth. It is not, he says, an alimentary means, for if in a convalescent milk be replaced by the strongest beef-tea the result would be disastrous; but if, as frequently happens, milk is not well borne by young children, if it should cause persistent diarrhœa, it may, during a suspension of one or two days, be replaced at first by concentrated broth, which may afterwards be advantageously mixed with cow's milk. Milk alone is indigestible; broth alone would lead to inanition, as it contains, abstraction being allowed for salts, but very little organic substances, too little of albuminates, too little of carbo-hydrates, and the fat which is found in it is not so easily digested as that of milk.

## Reviews.

THE PHYSICIAN'S LEISURE LIBRARY, No. 6. THE MODERN TREATMENT OF HEADACHE. By Allan McLane Hamilton, M.D.
Detroit, Mich.: Geo. S. Davis, 1888.

The modern treatment of headaches resembles the ancient treatment of headaches in that one seldom knows what kind of headache he has, and still more seldom discovers a means of curing it. The professional sufferers, and there are many such, search the pages of such a book as this with zeal rather than scientific interest, and yet with all the painstaking, all the real study which is evident on the part of the author, the same difficulty asserts itself that has always asserted itself in regard to other works on headache, and the bewildered sufferer asks, Which headache have I, and what shall I do for it? Here and there some one empirically discovers a cure for his own affliction, and every practical physician ought to have some rough method after a few years of experience by which he can diagnose, broadly at least, the varieties of headache. A rough method we call it, for it is probably based upon experimental results. Such and such general symptoms have in his experience been met successfully sometimes by such and such line of treatment. Thus, eye headaches, though the result of complex factors, are generally recognizable by pain after using the eyes at night, or by poor light, or excessively. Thus, headache, with digestive disturbance, at times may be traced to some marked errors of diet. Then there is the pain of overworking, the headache of rheumatism and gout; but when a systematic study of minute varieties is under-

taken, as in our author's work, we find ourselves speedily in deep waters when we attempt to follow him In vain we compare our headache with his many samples. Finally, we are sure we are on the right track. It is just like the description, and we try the treatment recommended and fail, and faith fails too. Still, it is better to know something than nothing, to have a bad plan of work than no plan at all; and the work under consideration is a veritable mine of therapeutic resources for headaches. True, we see in looking through it that the author treats successfully with certain remedies headaches which in our experience resist them, and succeeds in totally different ones; but no matter. Locality, season, or climate may have made the headache of a certain type in the country resist remedies that vanquished its city analogue, and it is a great thing only to be able to name a headache to convince the sufferer that he has a headache of a certain definite kind. It lifts him above the mediocrity of mankind, and ennobles him in some slight degree. He is almost happy in his unique and rare possession.

And it is especially valuable to discover the causes of headache. Many periodic or frequent ones may be cured by a change of modes of life. Never mind what change, but any change. Is the patient living in pure air? Send him to the slums. Is he indolent? Set him at work on some treadmill of daily life. Does he live in-doors? Thrust him out. Is his food solid and simple? Try a more elaborate *menu*. Is he a gourmet? Enforce the black bread of the European peasant. For, alas! we have no peasants of our own. Does he sleep too soundly? He may purchase an alarm-clock, set to rudely break his slumbers twice or thrice a night. Is he sleepless? Brandy alone, or with opium, if sleepless with a cool head. If he be rheumatic, who can fail to recommend the specifics now possessed by our art? Or if gouty, what will more relieve than a dance upon hot plates? We have long thought that something might be done here by the method of collective research. Starting with a carefully prepared list of every symptom and variety of sensation connected with headache, and sending it out for answers as to the remedies known to have reached such symptoms in isolated cases, and for any hints as to causation in the possession of the addressed, we fancy that much more practical results would be reached than by inquiries about pneumonia and typhoid fever as generally conducted. The end is not so important as far as life is concerned, but for comfort how great a boon! These thoughts, occurring from a perusal of Dr. Hamilton's book, while hardly a review of the work itself, will perhaps serve to call attention to its merits, which are very great. Its deficiencies are probably unavoidable at present, and it certainly is the most thorough and practical monograph on the subject of headaches and their treatment in our possession.

E. W. W.

THE PRESCRIPTION, THERAPEUTICALLY, PHARMACEUTICALLY, AND GRAMMATICALLY CONSIDERED. By Otto A. Wall, M.D., Ph.G., etc.

St. Louis, Mo.: Aug. Gast Bank-Note and Lithograph Company, 1888.

No elixir of life, no prescription of universal power, is described in this volume, but a vast mass of information systematically arranged is given us. Many may consider themselves as familiar with about all that can be said concerning prescribing and prescriptions, but Dr. Wall's book, if patiently read, will convince them that there was still much for them to learn.

An enumeration of its contents is unnecessary. Among other things it is an excellent and ready Latin grammar for the untaught, giving them enough Latin for their needs, with some knowledge of its grammatical construction. How to abbreviate Latin words properly; a complete study of weights and measures, as far as they relate to the subject, with an exceedingly plain and simple way of learning what we still think should never be learned,—the metric system; how to determine doses; how to combine—the whole subject of incompatibles—from the pharmacist's stand-point, which differs somewhat from the true one. There is also a complete list of remedies and of their various preparations.

Prescribing is an ancient art. The author takes it back to the earliest times. The Egyptians, as the papyrus of Ebers shows, did not begin their formulæ with any set sign. How many know that when they write with a flourish ℞ at the top of the blank they are invoking Jupiter? In these pages one may learn many things likely to be forgotten if not occasionally recalled as here.

Probably the words adjuvant, excipient, diluent, base, corrective, are already nearly obsolete. As regards dose, Dr. Young's rule is given, Dr. Cowling's, and Dr. E. H. Clark's. The last is the only one which is capable of giving the dose suitable for infants under a year. Whether it is a good rule is another matter.

The other rules leave us sublimely ignorant of what dose is proper for a child of 3, 6, or 9 months old, while Dr. Clark, assuming 150 pounds as the average standard weight, divides the real weight by 150. Thus, a child weighing 9 pounds would require $\frac{9}{150}$ of a dose. These rules are only valuable in avoiding overdoses of dangerous drugs. The finer gradations of doses used at the present day, in which the same remedy may be used in vastly different quantities to meet very different conditions, must be studied elsewhere and in a very different way. But we have said enough to indicate the value of this little work, and we would all, probably, be the better and wiser for its possession and study. E. W. W.

THE PHYSICIAN'S LEISURE LIBRARY, No. 3. DIARRHŒA AND DYSENTERY. MODERN VIEWS OF THEIR PATHOLOGY AND TREATMENT. By Professor Alonzo B. Palmer, M.D., LL.D., etc.
Detroit, Mich.: Geo. S. Davis, 1887.

With the approach of summer the medical man, to misuse Lord Tennyson, "Lightly turns to thoughts of diarrhœa." So prevalent is it with us in our favored clime that our author justly says, "Between the 31st and 42d parallels of latitude and east of the Rocky Mountains the form of disease we are now considering prevails more than in any place in Europe or elsewhere," the "steady wave of continuous heat, night and day, for several days together," being the great exciting cause. Whether principally by reducing the resistance of the body, or by the changes it causes in articles of food, the author cannot say,—probably in both ways. Aerial causes, too, play a part, and impure water a very important one; and to all these causes must probably be added the latest hypothesis of science, "the peculiar microbe or ptomaine" which excites diarrhœa. The author thinks it probable, on a wide view, that "no one specific poison is the exclusive cause of summer diarrhœa." The paper of Dr. L. Emmet Holt on the subject is warmly praised by the author. The study of the microbes of the intestine and the alkaloids found in fæcal matter is yet in its infancy. While many of the latter are already named, there is yet some obscurity both as to their causation and also their effects. The discoveries of Dr. Vaughan regarding tyrotoxicon are already common property, and have a very direct bearing not only in cases of notable poisoning and death, but as a hint of one ever-present cause of infantile summer diarrhœas. Indeed, by clinical observation, many practitioners have for years been convinced of the dangers attending milk diet in hot weather; the relief afforded in cholera infantum by a change of diet, the frequent relapses when milk is resumed, seem to point unerringly to some causes which theoretically could be defined as acting in the milk, either as a poison diffused through it, or by the supposition that the milk afforded a too ready cultivation fluid for the growth of micro-organisms, which either in themselves or their products produced the symptoms observed. No microbe directly responsible for the formation of tyrotoxicon has, our author tells us, been discovered up to the date of his writing, though he remarks that "it is, of course, inferred that a ferment, presumably a particular kind of microbe," exists. We should, however, constantly bear in mind that very different causes may produce very similar effects, and that a combination of causes may be essential to many results which occur.

The author's chapter on "Morbid Anatomy and Pathology" has a direct bearing upon his method of treatment, and upon the too frequently observed sequelæ of intestinal disease. Evidently leaning to the method of our ancestors, he believes in a thorough cleaning of the bowels when possible, castor oil being his favorite agent. And concerning the many causes which tend to foster, if not create, the diarrhœa, he gives very good advice, but advice very hard to follow, especially among those greatest sufferers,—the crowded poor of large inland cities. We both hope and fear that it will be long ere the hot-air flues of winter will be converted generally into cold-air flues for summer, and blow, by properly arranged fans, the cooled air of the cellar all over our dwellings. When all is done that is possible at present, and still cases occur, then treatment must be managed upon some such plan, the author believes, as that suggested by Dr. Holt, adding, what Dr. Holt omits, some attempt to check the discharges when they pass the limit of safety. When free diarrhœa may be supposed to have already carried off the contents of the bowels, unless serious exhaustion already exists, "a laxative should be administered." Altered secretions and putrefaction changes must be modified, hence he gives a moderate dose of some mercurial,—possibly a small dose or two of calomel,—followed by castor oil. If, however, the vomiting is too severe for this, "a free injection of pure water into the bowels." The next indication, and one which

is based upon the new view of intestinal disease already referred to, is to arrest decomposition and the production of irritating or poisonous substances in the intestine. Here we have the list of articles which may be used,—salicylic acid, boric acid, cupric sulphate, charcoal in powder, iodoform, and carbon bisulphide water. Other remedies which have been used with alleged benefit are creasote, naphthol, naphthaline, hydrarg. bichloride, resorcin, potassium chloride, the benzoates. But Dr. Holt considers that castor oil, followed steadily by sodium salicylate, is more useful than anything else, milk, as a diet, being absolutely avoided. Dr. Holt's statistics of one death out of eighty-one cases, taken without selection, are certainly remarkable, and these cases, mostly seen in dispensary practice in New York, will certainly be followed, if reliable, with marked corroboration. The author would supplement this treatment in some degree. When clearance has been effected, and the discharges are exhausting, "opium should be given," but with great care, especially in children; in fact, the opium treatment is described so minutely and so *con amore* by the author, that evidently his own opinion is that salicylate of sodium needs considerable assistance. Strychnine, which is last mentioned, will often be found beneficial much earlier than it is recommended by our author.

Part II., on "Dysentery," claims our attention as much as Part I. Indeed, dysentery is, in our limited observation, the most misunderstood and badly treated of intestinal disorders by the average man of the profession. Of its contagion the author has some doubt, but acknowledges that the poison of the disease exists in the discharges, if not in the body of the patient. Of its conveyance by privy infection we have no doubt; in fact, that seems the general method by which it spreads, just as water contamination seems the common cause of its extensive sudden outbreaks. In its treatment the general consensus of opinion favors the use of saline cathartics. Large doses of ipecacuanha seem to be most successful in the dysenteries of tropical countries. The author gives us many pages in regard to the method of its employment and the testimony of its advocates and opponents. In dysentery also salicylate of sodium has been advocated as very nearly as useful as it is in diarrhœa. This time will prove, but the author suggests it among other remedies as worthy of study in connection with this disease. E. W. W.

A Manual of Diseases of the Nervous System. By W. R. Gowers, M.D., F.R.C.P., Assistant Professor of Clinical Medicine in University College, London; Physician to University College Hospital and to the National Hospital for the Paralyzed and Epileptic. American edition.

Philadelphia: P. Blakiston, Son & Co., 1012 Walnut Street, 1888.

During the last decade the number of books which have been published upon diseases of the nervous system in the English language marks the growing recognition by the profession of the importance of this class of ailments, as well as the remarkable advance in their symptomatology and pathology, and yet we wish we could add growth in therapeutic power over these diseases, too often the practical outcome of our increase of knowledge being simply the ability to see afar-off coming suffering and death. The work of Dr. Gowers is a very large one; indeed, we are not sure but what it is the largest work by one author upon the subject of which it treats now before the medical profession. The type is not large, so that the rather oversized, nearly fifteen hundred pages are able to contain an enormous amount of matter. Indeed, so full and elaborate are the various articles that, in our opinion, very few students will be pleased with the book, but practitioners will use it as a work of reference in which to read up upon certain cases or points in practice when impelled by the necessities of the hour. The style of Professor Gowers is characterized by short, clear sentences, and perhaps by a little overpositiveness of assertion, which is shown, especially, in the lack of citations from other authors and of authority for statements which seem doubtful to one pretty well read in the literature of the subject. That the author of the work has seen an enormous amount of nervous disease, has studied it closely both at the bedside and in the physiological laboratory, almost every page of the book gives witness to. It is quite interesting to take such an article as that upon "Diver's Paralysis," so called by Dr. Gowers, and compare it with one upon any less peculiar and more familiar subject. We would be willing to wager pretty heavily that Professor Gowers has never seen an instance of the affection under consideration, but even in this article he gives little or no authority for his statements.

On reading the chapter upon locomotor ataxia our attention has been especially attracted by the statement that in the early stages of the disease there is sometimes a marked increase of reflex action, and that this "may

reach a degree rarely met with in any other affection." Here especially have we sorrow for lack of some reference to an authoritative case proving the truth of the assertion. Dr. Gowers, it is true, does say "that in one case a touch of the sole would make the foot fly up, and if the naked trunk was stroked, so violent are the effects that the patient on one occasion rolled off a sofa." We are not told that in this case it was ever shown by autopsy that the sclerosis was really confined to the posterior columns. Our own belief is, that whenever such a condition of excited reflex activity exists, the physician has not to deal with a pure locomotor ataxia, but a case in which sclerosis of the posterior columns is associated with a similar lesion in other parts of the cord, or in which the lesion is not that of locomotor ataxia at all. We have been especially interested in the description in the same article of a patient in which there was contraction of the range of hearing parallel to that which occurs in the field of vision, and also in noting that no mention among the crises of locomotor ataxia is made of the so-called cardiac crises, while laryngeal crises are said to be (after those of the stomach) "the most common of these symptoms." We have seen a number of gastric crises, have seen rectal crises and cardiac crises, but never an instance of the laryngeal crisis, which must in this portion of the world be very rare.

We have taken much trouble in going over the work to make out how much attention has been paid to American literature, and have noted Mitchell's name mentioned twice, Putnam's and H. C. Wood's mentioned each once. At first we were disposed to complain of this, but as, after much hunting, we have been able to find Charcot's name mentioned only three times, we suppose we ought not to complain. Of course, in making these statements, we do not mean to say that these names are not mentioned more often, but authorities are so infrequently alluded to that it is exceedingly difficult to discover them at all.

In looking over the article on meningitis, we find that inequality of the pupils is put down as a sign of certain organic disease. This bald statement, not modified, is certainly incorrect. We have seen inequality of the pupils when there was no organic disease, although its appearance has, of course, always a very serious import.

The illustrations of the book are of two characters,—one set are shaded drawings, the other are outlines. The outline drawings are, on the whole, good, some of them very good. The shaded drawings, evidently the results of some of the newer photographic processes, seem to us atrociously bad. The book closes with an article on neuræsthenia whose quality, as compared with the rest of the work, suggests that the author's brain was at the end of his labor pretty well exhausted.

Although we have ventured in some points to criticise the work of Dr. Gowers, we are very far from desiring to leave in the mind of our readers an unfavorable opinion concerning it. We think it the fullest and most complete treatise on the subject in the English language. It must have required years of labor for its preparation, and we congratulate the author upon having finished a task which will at once place his name in the foremost rank of the world's neurologists.

ATLAS OF VENEREAL AND SKIN DISEASES. Edited by Prince A. Morrow, A.M., M.D., Clinical Professor of Venereal Diseases; formerly Clinical Lecturer in Dermatology in the University of the City of New York, Surgeon to the Charity Hospital, etc.
New York: William Wood & Co. (Price, $2.00 per part.)

Four fasciculi of this work have so far appeared, and these are to be followed, at monthly intervals, by eleven more, making, when completed, fifteen in all. Each fasciculus contains five folio colored plates, and in most of these several figures are portrayed. Explanatory text accompanies each plate, and, moreover, each fasciculus contains sixteen to twenty folio pages devoted to a practical consideration of the various venereal and skin diseases. In fact, the work is a brief treatise, surrounded, as it were, by many clinical cases in the form of chromo-lithographic illustrations. The plates in part are original, and in part selections from the works of well-known specialists.

A publication of this kind is necessarily an immense and laborious undertaking both to the editor and to the publishers, and, if the result is measurably satisfactory, is entitled to generous support. In the present instance, the four parts before us give promise of an atlas of much more than average worth. The selections are good, and the coloring, upon the whole, is equally excellent.

The five plates of the first fasiculus are devoted to chancroids, in the male and female, and really present twenty-five illustrations. These represent the different phases of the "soft sore." The second fasciculus pictures the chancre, or initial lesion of syphilis. This, as it occurs upon the penis and neighboring

parts, is well portrayed, and several extra-genital chancres are also shown. The third and fourth fasciculi contain illustrations of the more common syphilodermata,—the macular, maculo-papular, miliary papular, large papular, papulo-squamous, and the papulo-pustular.

The second fasciculus contains in all twenty-two illustrations; the third, fourteen; and the fourth, six. These four fasciculi, therefore, although nominally containing five plates each, present in reality sixty-six colored figures.

Accepting the fact that colored illustrations of the different skin and venereal diseases, no matter how perfect, are at the best a poor substitute for clinical study, yet we cordially admit that the value of such plates, studied with the aid of a good text-book, is not to be underrated; and for those lacking hospital and dispensary opportunities for familiarizing themselves with such diseases, they are, indeed, to be commended. For this large class of our profession, therefore, a good atlas is of practical worth; and if the succeeding parts of this work average as well as those before us, as much may be learned from it as from other similar publications.

## Correspondence.

### PARIS.

(From our Special Correspondent.)

Saccharin being of American origin, all new facts touching its properties and improvement cannot fail to have a peculiar interest to readers on the Western side of the Atlantic. D. P. Mercier appears to have discovered a very convenient process for making *soluble saccharin*, hitherto a great desideratum. In cold water pure saccharin is very sparingly soluble, only about two per thousand. With the addition of alkalies it becomes more soluble, but the unpleasant and almost bitter taste it acquires more than makes up for the increased solubility. Dr. Mercer has succeeded in avoiding the unpleasant dilemma by the following method:

Take of

Pure saccharin (Fahlberg's), 10 parts in weight;
Distilled water, 5 parts in weight;
Pure sodium bicarbonate, 4 to 4.5 parts in weight;
Alcohol of 95 degrees, 20 parts in weight;
Sulphuric ether, sufficient.

Mix the saccharin with the water, and add the bicarbonate by very small portions, at about half an hour's interval, and with frequent agitation, to facilitate the escape of carbonic acid gas.

A very important point is to stop the addition of bicarbonate before complete saturation, so that the liquor shall remain slightly acid. The operation requires from ten to fifteen hours. When it is done, the alcohol is added to the mixture, and the whole is transferred to a filter placed over a vacuum apparatus. The alcoholic liquor thus separated is yellow-colored, and contains a small quantity of sodium saccharinate, besides the excess of saccharin and all the impurities to which saccharin mostly owes its bitter after-taste. The powder is washed a second time with alcohol, and finally with ether. All through the operation it is important to avoid heat, as carbonate of sodium will, under such circumstances, transform saccharin into salicylic acid. Should the carbonate contain free soda, or the alcohol be added before the reaction has been completed, a secondary compound might be formed, which has no sweetening power, and probably belongs to some *para* series of saccharin. The foregoing reasons explain why the addition of sodium carbonate to saccharin to increase its solubility has so far proved so unsatisfactory. The soluble saccharin prepared by M. Mercier's process is in the shape of a crystalline, stable powder, whiter than pure saccharin, and possessing its intense sweetening properties. It is sparingly soluble in alcohol or ether, but 100 grammes of water at 15° C. will dissolve 3.35 grammes of the neutral saccharin. Dr. Mercier, as in duty bound, greatly extols the new compound; but it cannot be overlooked that, like glycyrrhizates, saccharinates, when prescribed with acid liquids, will return to their natural state of very sparing solubility,—a fact greatly interfering with their usefulness in medicine. As regards the therapeutic properties, Dr. Mercier's conclusions, drawn from his own experiments, agree in the main with those already accepted,—namely, that saccharin, acid or neutral, is perfectly harmless; that it is eliminated unchanged through the kidneys, has intense sweetening power and moderate antiseptic properties; that it is especially adapted to diabetics, etc. To the last point, however, Dr. Gautrelet has taken exception, so far, at least, as some forms of diabetes are concerned, such as those tending to turn into fatal tuberculosis, owing to a hypersecretion of chlorides through the kidneys. The form in question, called organic polyuria, with or without sugar, is characterized by great deficiency of chlorides in the economy,—a condition apt to be brought about by saccharin.

Dr. Bardet, while entirely agreeing with Dr. Gautrelet, from actual experiments with his patients and himself, is convinced saccharin is bad for dyspeptics. The chemical having among other properties that of retarding peptic and pancreatic digestions, it cannot but injuriously affect all sufferers from dyspepsia.

As no little attention is at present paid to throat operations, in Germany and elsewhere as well, the following instance is singular enough to deserve mention. It is one of a *leech in the throat*, harbored several weeks by a soldier in Africa. Dr. Godet, an army surgeon, under whose care the patient was, remarked that, although the man had been spitting blood for eight days, he did not suspect at all the presence of the leech. Notwithstanding the characteristic symptoms of a foreign body in the larynx, such as hoarseness, the feeling of something strange there, the *bruit de drapeau* (noise of flag-waving), the leech remained in the same hiding-place, without causing suffocation or being perceived upon laryngoscopic examination. It was only on the twenty-third day, after a violent expiration effort made by the patient, that the leech could be seen by Dr. Godet. The extraction *per vias naturales* was, of course, indicated, but the army surgeons having at hand only straight forceps of too large size, and none being procurable in a distant military station, they boldly decided to practise thyrotomy; that is, a median incision of the thyroid cartilage. On gently opening the two edges of the cut the leech came in sight, and was easily pulled out with a claw-forceps. Two stitches next closed the incision, and complete and rapid healing followed. Dr. Godet calls especial attention to some interesting points,—namely, that the introduction of the leech—probably swallowed while drinking water—was not noticed by the soldier at the time; that its presence never caused suffocation; and that after operation the patient recovered perfect intonation of voice, and experienced no complication of any sort.

A new medication is now introduced. Were it not for the pun, it might be said to be in the air; for it is brought forward from several quarters at the same time, and consists in diffusing various gases or vapors in the atmosphere breathed by the patient. The apparatus is based on the principle, long known, of Davy's *glow-lamp*, whereby a coil of platinum, tipped with spongy platinum, on being placed round the wick of a spirit-lamp, the alcohol set on fire till the wire becomes red-hot, and the flame then blown out, the wire and platinum black will continue to glow for a considerable period. The combustion thus produced is imperfect, and sets free quantities of ethereal and ozonized vapors, which it is now proposed to utilize for medical purposes. Dr. Onimus, an electrician of some note, has had the idea of using, besides plain alcohol, ether, petroleum, benzine, and various tinctures for feeding the lamp. The different liquids, when not medicated, sensibly afford similar combustion products,—namely, aldehydes, ethereal and ozonized compounds,—very useful for disinfecting purposes. But when advantage is taken of the solvent power of the feeding liquids, Dr. Onimus thinks many complaints may be relieved without chance injury to the stomach. For instance, with an alcoholic or ethereal tincture of terpine, terebene, eucalyptol, or aconite-root, coryza, bronchitis, hay-fever, etc., are rapidly benefited, and the mucous discharges will speedily cease. At the same time it must be confessed that, while the local symptoms improve, the general, such as fever, etc., are less amenable to the vapor treatment. Two consumptives experienced great relief from inhalations with an alcoholic solution of terpine and one per thousand of corrosive sublimate. Oil of thyme dissolved in benzine proved very effective for consumptives and also for asthmatics, although, for the last, tincture of belladonna afforded better results.

*Hydrofluoric acid*, so much extolled a short time since as a remedy for phthisis, seems to be now losing ground as such. At least Lyons physicians, generally somewhat inclined to disagree with their Paris brethren, report that the effects of hydrofluoric acid inhalations have not in their hands proved very remarkable. At the same time, they cannot be said to be discouraging altogether. But one point deserving notice was the marked increase of appetite observed in all their patients treated with hydrofluoric acid. Whatever may have been the success, so far as tuberculosis is concerned, there could be no doubt in regard to the stimulation of appetite. Dr. Lépine, of Lyons, gave it as his opinion that probably some of the acid reached the stomach, where it acted somewhat in the manner of its congener,—muriatic acid. Such theory is, perhaps, hazardous, and the fall of hydrofluoric acid from a phthisis antidote to a mere appetizer is insufficiently supported by facts. But it will be admitted that the two therapeutical properties are not antagonistic; on the contrary, it is rather in favor of hydrofluoric

acid in tuberculosis that it should at the same time increase the patient's appetite.

*Tuberculous rats* is the latest discovery in the way of tracing the propagation of tuberculosis; in good justice they, being mammifers, should have had precedence over tuberculous chickens and flies, which are only birds and insects. But at last their claims to notice have been recognized. At Berck-sur-Mer, a small seaport town, some twenty-five miles south of Boulogne, the city of Paris has established a sanatorium and asylum for her tuberculous and scrofulous pauper children. As may be expected, abscesses and tumors are common, and flaxseed-poultices in great demand; but, instead of burning them, it seems careless nurses have been in the habit of throwing them away in some out-of-the-way corner. Indeed, they might have done worse, and imitated the thrifty housewife who would feed the cow with her husband's cast-off poultices. However it may be, the rats attached to the institution had found out the bonanza, and were wont to eat up the poultices, muslin and all; so that no trace remained of the nurses' carelessness, and everybody was happy; until one day some of the internes went rat-hunting, and found all the rodents to have enormous necks, out of all proportion to their size. Upon examination the hypertrophy proved to be owing to the tuberculization of the local glands. Other organs, it appears, were also affected by the disease, and no doubt many rats had succumbed to the contagion. But, as rats are accustomed to give their dead a prompt burial, the fact could not be definitely ascertained.

PARIS, April 25, 1888.

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## PARIS.

(From our Special Correspondent.)

Strophanthus and curare are now threatened with the competition of a dangerous rival,—also, of course, an arrow-poison. The new substance in question was experimented with by Drs. H. de Varigny and Paul Langlois, and was brought by Dr. Faurot from the Somalis country, near the French station of Obock, in Eastern Africa. It bears a native name, which the French phonetically transcribe *ouabaïo*, the people there knowing no alphabet, but which may be Anglicized into *wabayio*, so far as sounds are concerned. The poison consists of a brown, hard, resinous matter adhering to the part of the poisoned arrow just back of the barbed tip. The effects on rabbits and guinea-pigs are quite striking. When 5 or 10 milligrammes of the poison have been injected hypodermically the animal at first appears completely unaffected, and remains unconcerned for a while, until sudden cramps are manifested, doubling up as it were the animal, which is soon taken with convulsions, and dies with all the symptoms of asphyxia. A number of experiments performed with frogs, rabbits, and dogs tend to demonstrate that the poison's action bears especially on the heart and respiration's centres of innervation,—that is, the medulla, while sensibility, motility, and reflexes remain unaffected. The heart's beatings continue for some time after the lungs have ceased to act, but artificial respiration is powerless to prevent the heart from stopping also. From chemical and botanical researches made by M. Arnaud, of the Jardin des Plantes laboratory, it appears the arrow-poison consists of an aqueous extract made from the wood, and especially the root, of a native tree growing on the slopes of the Somal Mountains, and considered by MM. Franchet and Poisson to belong to the genus *Carissa*, of the Apocyneæ family. Several logs of the wood, brought home by the traveller Revoil, were found to be of very hard and compact texture, somewhat resembling locust-wood, and to contain a poisonous glucoside. The active principle may be extracted from the shavings with boiling water,—a fact explaining the natives' familiarity with such deadly agents. The glucoside, named *ouabaïn* by M. Arnaud, may be obtained by exhausting the drug with hot water, concentrating the liquors, precipitating coloring and extractive matters with lead acetate, separating off the lead excess with hydrogen sulphide, and, lastly, evaporating *in vacuo*, when the liquor, on being mixed with six times its volume of eighty-five per cent. alcohol and left to spontaneous evaporation, deposits crystals of the active principle. So far but little is known of the chemical and therapeutical properties of ouabaïn, save the fact that 2 milligrammes ($\frac{1}{30}$ of a grain) of it will in a few minutes kill a twenty-seven-pound dog. With such credentials the new glucoside may be sure of a cordial welcome in experimental therapeutics.

*The licking of the eyes* as a therapeutic method turns out to be, after all, a widespread and time-honored practice in Eastern countries. No little astonishment was felt, a

short time since, when medical papers reported that a sort of epidemic syphilis had broken out in a Russian district in consequence of the patients' eyes having been licked by a man affected with chancres in the mouth, and such an occurrence remained to residents of Western Europe almost unintelligible, except as a sort of relic of barbarism. But at the Ophthalmological Congress, held this month in Paris, Dr. Costomiris, a professor of Athens, stated such a popular practice to have existed in Greece from time almost immemorial, since it was recommended from the period of Æsculapius. According to popular notion, the one who is to perform the operation must be of sound health and sweet breath: if a man, he must not smoke; if a woman, she must not be in her periods. Usually a young maid or lad is chosen, and preferably one belonging to the family. Before licking the eyes the operator's mouth must be washed with water, and a little rue chewed to purify the tongue. For the past seven years, Dr. Costomiris has observed several cases of leucoma of the cornea, pannous and parenchymatous keratitis, and chronic ulcers thus treated, with very satisfactory results.

If the discovery of a new vegetable principle is a common enough occurrence, *the loss of an alkaloid* is indeed rare; yet such seems to have been the fate of the *narceine* used some twenty-five years ago by Claude Bernard in his celebrated experiments. Pelletier long since discovered in opium an alkaloid which he called narceine, but the substance experimented with under the same name, in 1864, by Claude Bernard was prepared by M. Guillemette, a Paris pharmacist. The great physiologist found the chemical to possess remarkable virtues,—in short, to have all the advantages of morphine and codeine, but none of their disadvantages. Great hopes, therefore, were entertained of the new narcotic which were never fulfilled. Since then both Bernard and Guillemette died, and all those who tried to repeat the experiments with narceine were disappointed. The alkaloid made after Pelletier's method presented none of the chemical or physiological properties described by Claude Bernard. Guillemette's narceine was decidedly lost, and all efforts to prepare it anew have been lamentable failures. Again, last week Dr. Laborde read before the Academy of Medicine a paper in which M. Duquesnel, his friend, was represented to have been successful in the search, while a somewhat obscure description of the process was given. But at the following sitting Dr. Constantin Paul took exception to Dr. Laborde's conclusions, showing the possibly intentional vagueness and uncertainty of the mode of preparation, and finally gave it as his opinion that the narceine question remained as unsolved as before. So, for the present, Claude Bernard's narceine is still missing.

The *antagonism between certain poisons*—morphine and atropine, for instance—has been so long an admitted doctrine in therapeutics that it may be interesting to hear what its opponents have to say on the other side of the question. Dr. Roger, at a recent meeting (May 12) of the Paris Biological Society, related a number of experiments made by him at Professor Bouchard's laboratory with four well-known poisons,—namely, morphine, atropine, quinine, and potassium chloride. The trials were made on animals, after having first determined the toxic effects of the different substances when injected alone into the veins. Next, mixtures of the chemicals, two by two, were made and the poisonous action observed. It was found that with mixtures of morphine and atropine the animal is killed long before he has absorbed what would have been a lethal dose of either alkaloid administered by itself. The same was true with atropine-and-quinine and quinine-and-morphine mixtures. In all of the foregoing instances the two substances acted concurrently, and their toxic virtues were most exactly added to each other. Moreover, it was noticed that mixtures of quinine and potassium chloride were nearly twice as poisonous as the two components would have been, supposing their influences were superadded. When potassium chloride was combined with morphine each substance acted independently, and the animal was killed whenever either of the poisons had been administered in doses normally mortal.

Dr. Roger's summing up of his experiments was that, as a rule, the final effects of different poisons taken at the same time would correspond closely to the sum of their separate energies added together, and that if occasionally the association would increase the danger for the patient, he had never known one poison to act as the antidote of another; in which pessimist view of things he was seconded by Dr. Dupuy, who recalled Dr. Bennett's (of Edinburgh) experiments disproving the toxic antagonism between morphine and atropine, and the more recent American investigation showing that the joint effects of morphine and aconitine were only cumulative.

Dr. Roger admitted the incidental physiological antagonism, but maintained its uselessness as a protection in cases of poisoning.

*Thuja occidentalis*, our old acquaintance, is now and then drawn from oblivion, and for a while cures cancers, ulcers, and parasitic vegetations generally. This time Dr. Baratoux, a city practitioner, after extended trials and critical observation, has come to an apparently fair conclusion respecting the real merits of the drug, and discriminated between what may be expected of thuja and what may not. The preparations used by him were the tinctures of the wood and of the fresh leaves. The berries, on the other hand, were found inert, and the *Thuja orientalis* leaves and wood nearly so. The daily dose of the tincture (1 to 5 by weight, it is to be presumed) was 20 drops at the start, gradually increased to 3 or 4 grammes (1 to 1¼ fluidrachms). At the same time, external applications were made with the tincture,—directly when possible, or with the preparation diluted and blown through an atomizer when the tumors were inaccessible. A convenient dilution for the purpose is the following:

Tincture of thuja, ʒi;
Glycerine, ʒii;
Water, ʒiiss. M.

The mode of medication being thus clearly defined, the results may now be described. In tumors of the ear, nose, mouth, pharynx, and larynx, especially those of a neoplasmic character in the latter organs, the first effect noticed is the rapid decrease and disappearance of the fetid smell characterizing the mucous and purulent discharges. The next is a decrease in the quantity of the secretions, and the third, usually noticeable after about twenty days, a reduction in size of the vegetations. In nose and ear papilloma complete cure may be obtained. But whenever the tumor is a complex one, only partial relief is secured, the neoplasma falling off as to size, but never disappearing altogether, while sarcoma and carcinoma remain seemingly unaffected by the treatment. And finally, in epithelioma Dr. Baratoux recommends thuja as very efficient in checking the evolution of the disease, and especially lessening the offensive odors peculiar to the ulcerative period of cancer. He insists on this point,—that thuja in larynx epithelioma is only a palliative which may delay, but cannot replace a surgical operation, the only cure—when successful.

PARIS, May 18, 1888.

## BERLIN.

(From our Special Correspondent.)

In one of my letters to you last year I gave a short account of the yearly Medical Congress which is held in Wiesbaden (Congress für innere Medicin). The Congress is always attended very largely by practitioners from Germany, Austria, the Netherlands, and Switzerland, and excites universal interest in the German-speaking medical world, as the most renowned authorities of Europe meet here and take part in the discussions and debates.

In many instances subjects are brought up and discussed so thoroughly that a final and definite conclusion is at length reached, so that, in a way, the Congress acts as a court before which diseases are marshalled and carefully judged by science and experience; and the conclusions reached here may well be looked upon as correct and unbiased. Last year I wrote you concerning prophylaxis and the therapy of phthisis, as discussed by the Congress, as these subjects seemed to be of peculiar interest to the readers of the GAZETTE. This year, in all three of the principal sittings of the Congress, subjects were brought up which were of special therapeutic value and interest.

Therefore, as I attempt to give you a description of all which I deem will be interesting to your readers, I am confronted by an excess of material which will necessitate my making this letter longer than my usual communications. I sincerely trust that your readers will overlook this encroachment on your valuable space.

The first question which was brought up before the Congress for discussion was the treatment of chronic diseases of the cardiac muscles. The debate on this subject was highly interesting, especially so as it was conducted by Professor Oertel, of Munich, whose writings on this subject are known and quoted even beyond the seas.

The term "Oertel's treatment" has become as familiar to us as "Banting's treatment" for obesity once was, and is also as much misused as the latter has been. The "terrain treatment" was first suggested by Oertel and had an enormous patronage, and it was only natural that the indications requiring such a treatment were greatly overestimated, and were not confined to those laid down by the originators. Almost every person suffering from any cardiac trouble thought that in this treatment he had at last found a panacea which would be sure to rid him of his trouble, and therefore hastened to one of the numer-

ous places where the treatment was administered,—once there, would strain and overtax his already feeble heart until, in a few weeks, the penalty of his ignorance was paid by death. The reaction which followed this wholesale adoption of the terrain treatment soon came. Some time ago men like Leyden, Fraentzel, and others had raised warning voices, and it was, therefore, very timely that this subject was brought up in the last Congress, and the *pro* and *con.* carefully discussed by competent judges.

In opening the debate Oertel gave a sketch of his experiences, which I will reproduce here as shortly as possible :

Changes in the cardiac muscle which are due to disease must be considered quantitatively as well as qualitatively. The first consists in an increase of the heart's muscle, which is both absolute as well as relative, and may affect but certain portions or the whole heart. This increase of the heart's muscle may be usually traced to an increased activity of the valves which is caused by pathological changes, and may be looked upon as a hypertrophy of compensation. The treatment, however, must not consist in a reduction of this hypertrophy ; rather, it is the duty of the physician to retain it, or, if it be lost, to call it forth again. Where symptoms of compensatory hypertrophy are not well marked, symptoms of a decrease of the heart's muscle-insufficience will soon be observed, and will contraindicate further treatment in this line. Qualitative changes of the cardiac muscle are due to inflammatory processes, defective nourishment, or degeneration which may be caused by various diseases. In such cases the muscular fibres themselves show changes in their morphological composition. The most severe form of this kind of change in the heart's muscle is that known as fatty degeneration of the muscular fibres. Finally, mention must also be made of one other change of the substance of the muscle,—viz., the substitution of one part of the muscular tissue by connective-tissue. Cardiac troubles caused by acute infectious diseases were not taken into consideration. The presence of chronic diseases of the heart's muscle is recognizable in a decrease of the strength of the heart and an insufficience of the muscle. The disease always takes the phase of circulatory disorders. The principal troubles which are caused by a decrease of the heart's strength are anæmia, thrombosis in the veins, collection of blood and serum, and kidney affections.

The prognostic conclusions in such diseases must be based upon the severity and kind of defects of nourishment observed, and upon other complications which exist outside of the chronic diseases of the heart itself.

The "curative method" instituted by Oertel for this class of diseases may be divided into two sections,—the *dietetic* treatment and the *mechanical* treatment.

The first is regulated by the nutritive or fatty condition of the patient. The following are the symptoms observed : 1. Abnormal condition of fat, plethora, with a diminishing of the heart's strength. The diet in such a case should be an increased amount of albuminoid substances and a less amount of fatty substances. There need be little or no change in the amount of fluid given. 2. Fatty degeneration, accompanied by serous plethora. The dietary indications in this case are as follows : Increase of albuminoids, decrease of fat-producing substances, and also a decrease in fluids. 3. Fatty degeneration in older subjects, accompanied with hydræmia, in which cases there is not alone a lessening of albuminoid matter, but also a decrease of fat. Here one must also give a large amount of albuminoids, together with a moderate, or, in some cases, even increased, amount of carbohydrates. At the same time, the amount of fluids must be considerably lessened. 4. Existing inanition ; weakness, with diminished strength, of heart ; anæmia and hydræmia. The diet in this case should also consist in an increase of albuminoid matter, and also an increase of muscle-producing food, until a state of muscular hyperplasia supervenes.

The mechanical treatment forms an accompaniment to the dietetic treatment. Oertel first advises the practice of rising from various grades of a stooping or bending posture. Other authorities, such as B. A. Schott, recommend passive movements, also movements requiring a certain amount of strength.

This mechanical treatment is said to give a certain motoric impulse, and also to annul any circulatory disturbances. This result is reached by an increase of the heart's activity. The heart's power of aspiration is also increased ; and as during these movements more venous blood is pumped into the larger veins, the blood flows in greater quantities into the right heart than when the body is at rest.

If this increase of the heart's activity is kept up for some time, and the pressure of

blood in the arteries becomes increased, it will cause, by a reflex action, a compensatory enlargement of the arteries and a decrease of the tension of their walls. The outflow of blood from the left heart is facilitated, the quantity of arterial blood increased, and the quantity of the venous blood lessened. The lungs also are benefited by the latter. There will be a marked expansion of the thorax during inspiration, an enlargement of the surface of the lungs and much greater ease in respiration. All these symptoms are far greater and more marked when a rising movement has been practised than when any other movement has been resorted to.

When it is desirable to increase the strength of a weak heart, it is of first importance to decrease, if possible, the work required of it. With this end in view, Oertel does not advise a diminishment of the quantity of blood, but a decrease, as far as possible, of the amount of water in the system. This may be accomplished by decreasing the amount of fluid foods and drinks and by increasing the quantity of fluid given off by the body. The latter may be accomplished both by increasing the flow of urine and by causing profuse perspiration by means of muscular exercise. The increase of urine will depend upon the strength of the heart in a measure, for if the latter is very weak the functions of the kidneys will be impaired.

Dr. Oertel now endeavored to explain the indications and contraindications for his method of treatment. Sclerosis of the coronary arteries is no contraindication,—rather, an indication both for the mechanical as well as the dietetic treatment. The regular diet and methodical movements, such as walking, etc., have an undeniably beneficial effect upon the cardiac muscles in all chronic cases, yet the practice must be resorted to with the utmost caution. Chronic and frequently-relapsing endocarditis, weakness of the cardiac muscles, long-standing compensatory and valvular troubles, cardiac aneurism, general atheromatosis, and chronic diseases of the kidneys in long-standing cases of heart weakness, form the principal contraindications for the employment of Oertel's method, or rather may be taken, as Oertel himself says, as a sign that the treatment should be used but moderately. In all cases, however, he says, it is well to proceed slowly and cautiously, unless all symptoms which would either indicate or contraindicate its use have already been discovered.

The second speaker on this subject was Professor Lichtheim, of Berne. The stand taken by him in the case was different to that of Oertel's in many particulars, although theoretically he had to agree with Oertel in many instances. He formulated his own observances in the following conclusions:

1. Oertel's method is a veritable panacea in those cases of chronic heart-disease which owe their origin to a want of proper exercise.

2. In diseases of the heart which, on the other hand, are due to over-exertion and continual strain upon the body, or in any case where the increased expansibility of the cardiac muscle is due to other causes, Oertel's method is not of the least value. Bodily exertion should be allowed only to a very mild and gradual degree in compensatory affections. Great care must be taken to prevent undue dyspnœa. Such cases must be treated with far greater caution than those with valvular troubles alone.

3. The medical treatment of compensatory affections with digitalis, strophanthus, and caffeine must be recognized as the most reliable manner of treating such cases. Where this treatment fails the "mechanical-dietary" treatment will also be powerless to render any aid. In its action in causing the absorption of dropsy Oertel's method can augment the medical treatment, but in no case can it ever substitute it.

4. During the period of intact compensation all medication is superfluous, aside from possible symptomatic indications. It is in such cases where the mechanical-dietary treatment may prove to be of great value, and Oertel's method may be looked upon as a model of such a treatment.

The discussion which followed was to the effect that Oertel's treatment cannot be proceeded with too carefully; it should never be used without a thorough knowledge of all the patient's symptoms. The unanimous wish expressed was that precise indications warranting the use of this treatment should be formulated.

(To be continued.)

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### *CARBOLATE OF CAMPHOR.*

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—In the March number of the GAZETTE Dr. T. Schaefer claims to have first described "Carbolate of Camphor," under the name of "Phenol Camphor," and on reading his articles in the journals which he named I find he is justly entitled to precedence over myself, though I had never read or heard of the preparation before I prepared it,—a little more than one year ago.

That it is a valuable addition to our therapeutics, and especially to our antiseptic resources, I am very sure. I find that neither heat nor any solvent is required in its preparation, but when crystals of carbolic acid are brought in contact with camphor, the former will dissolve a little more than three times by weight of the latter, *and the acid loses all of its caustic properties*, while its antiseptic qualities do not seem to be impaired. The mixture does not act upon gelatin, so that it can be used internally in capsules, when it is desired to administer either camphor or carbolic acid. I give about 6 drops three or four times a day in capsules, which are easily filled with a pipette.

Very truly yours,

M. B. COCHRAN.

SHAWANO, WIS., April 23, 1888.

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To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—I earnestly desire you to make known to your medical friends the wonderful medicinal properties of the juice of the maguey or century plant, a native of this country.

I have been practising in the City of Mexico for a number of years, and have made a special study of this natural product. It is called by the natives pulque, and forms their principal drink, and, I might almost add, food.

But it is more especially of its effect on a diseased kidney that I desire to write. Bright's disease is unknown among the natives here, and I employ it in all pathological conditions of the kidney where albumen is present. I have among my notes several cases that were undoubtedly cured by its use, and it now forms my sole treatment of Bright's disease. A chemical analysis shows it to be rich in phosphatic elements, and it is, therefore, a splendid nerve tonic. It should be given in doses of one-half to two-thirds of a glassful two or three times daily, with meals.

In fact, its many health-giving properties have certainly deserved for it more than this tardy recognition, and I am sure that it is destined to become a standard remedy for the treatment of all wasting diseases.

I am very truly yours,

DR. A. W. PARSONS,

*Chief Surgeon, Mexican National Railroad, City of Mexico.*

Harvard '80.

May 15, 1888.

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## Notes and Queries.

### *A NEW ANTISEPTIC.*

MESSRS. ELLENBERGER and V. HOFMEISTER have recently published a paper in the *Archiv für Exper. Pathol. u. Pharmacol.* upon some new derivatives of naphthol,—namely, certain acids derived both from alpha- and beta-naphthol which they found to be more powerful antiseptics than either salicylic or carbolic acid.

One of these compounds is alpha-oxynaphthoic acid (or alpha-naphthol-carbonic acid). This is prepared in a similar manner to salicylic acid, naphthol being substituted for phenol. In fact, it is prepared by bringing together, under strong pressure, and at an elevated temperature, alpha-naphthol sodium and carbonic-acid gas. Its constitution is expressed by the formula $C_{10}H_6.OH.COOH$. The *Chem. and Drugg.* thus abstracts a portion of the paper: The compound is nearly insoluble in water,—one hundred cubic centimetres in the cold only take up .0535 gramme. The acid sublimes unchanged between 90° C. and 100° C., and melts at 186° C. with evolution of carbon dioxide. It is soluble in the alkalies and alkaline carbonates, forming salts which are colorless and of neutral reaction, and more soluble in both hot and cold water than the acid itself. Thus one hundred cubic centimetres at 18° C. dissolve 6.37 grammes of the salts. The acid is precipitated from its salts by hydrochloric, sulphuric, nitric, or acetic acid, but not by carbonic-acid gas. Solutions of the salts ultimately decompose when kept even at normal temperatures. The sodium salt, on the addition of fuming red nitric acid, changes to a beautiful violet or blue color, slowly passing into red, by which reaction the acid may be always identified and distinguished from beta-oxynaphthoic acid, with which it is isomeric, but which, with fuming nitric acid, affords only a greenish-yellow coloration.

Alpha-oxynaphthoic acid and its combinations with alkalies have been studied by the authors with regard to their antiseptic properties, and also in regard to their effects upon the body in health and disease, and upon the various organs of the animal structure. Fresh meat-juice began to putrefy in from about twelve hours when kept at from 37° C. to 40° C. The addition of 1 to 20,000 of $\alpha$-oxynaphthoic acid was found to retard the decomposition to forty-eight hours, and with a proportion of 1 to 2500 no bacteria could be detected in un-

boiled liquids after seven days. When the liquid had been boiled, an admixture of 1 to 1200 was found to be amply sufficient for the prevention of putrefactive change. In the proportion of 1 to 600 decomposition was stopped in liquids undergoing rapid change. The sodium salt, however, had to be added in the proportion of 1 to 300 to prevent decomposition, and when this was actively progressing the salt named was powerless to check it. The effect of the β-acid was very similar.

It is surmised that these compounds will also turn out to be antipyretics, like salicylic acid; and if they are to be used as such, probably they will be used in the form of sodium salts.

Experiments thus far conducted to ascertain the destructive effect of these agents upon bacteria are reported to have given very favorable results.

If these substances are to be used in medicine, it will be necessary to rechristen them. —*American Druggist*, April, 1888.

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### *HOW TO USE CREOLIN.*

In reply to inquiries from numerous medical brethren as to the best methods of employing creolin in various classes of cases, Dr. Max Kortüm has published some additional account of his experience of this substance. Solutions have at first a milky appearance, but if allowed to stand for any considerable time become brownish, owing to the resinous principles and naphthaline salts separating out. For surgical purposes two solutions are employed,—a two per cent. solution and a one-half per cent. solution. The stronger one is used for disinfecting the hands, the instruments, and the surface of the patient's body. This has no undesirable effect on the skin or on the instruments. The weak solution is employed for irrigating wounds, for saturating tampons, and for moistening dressings, etc. Creolin has a decided hæmostatic action, and yet even in strong solutions does not act as a caustic. It may, if very strong, cause smarting, but only temporarily. In a case where a pulmonary cavity communicated with the cavity of the pleura which had been opened for empyema, copious hemorrhage occurring some days after the operation from the lung cavity, a plug soaked in a two per cent. solution of creolin was inserted, and stopped the hemorrhage at once, the only unpleasant effect produced being that the sputa tasted of creolin. In cases of large burns and bedsores, permanent baths of creolin-water have proved very successful. In the case of bedsores, Dr. Max Kortüm suspends the part affected in a pan containing a five per thousand solution. In midwifery cases the vagina may be washed out with the one-half per cent. solution, both before and after delivery. Where the perineum is ruptured, this solution has an excellent effect, when used to moisten compresses kept applied to the part. In a case of atony of the uterus post-partum, a plug soaked in a two per cent. solution proved very successful. Surgical dressings, gauze and moss applications, can be moistened every day or two with the creolin solution. In addition to watery solutions, creolin may be prescribed combined with oil or cerate, or as a powder with boracic acid as a basis. Cotton-wool is also impregnated with it. The five per cent. oil may be used for itch or pediculi. In gonorrhœa, injections of a watery solution of from 1 to 5 per 1000 are very effectual, and in vesical catarrh a 1 per 1000 solution may be injected with advantage. Both in this affection and in gonorrhœa creolin may also be given internally in pills containing from 1½ to 4½ grains each, three or four times a day.—*Lancet*, March 17, 1888.

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### *CEREBRAL LOCALIZATION.*

In spite of the attacks made upon it by Brown-Séquard and Goltz, the doctrine of the localization of function in the cerebrum since the day when Broca showed that the left third frontal convolution contained a centre for speech, has steadily gained ground, notwithstanding the seeming contradictions of experimentation and of clinical and post-mortem observations, and notwithstanding the contentions of its adherents on questions of detail.

In the first place, the doctrine of localization finds a certain amount of support in the results of anatomical investigation. It is not entirely without significance that in the so-called motor regions of the cortex there are ganglion-cells of a different shape from those in the other parts of the brain. The great amount of work that has been done in the study of secondary degeneration, Von Gudden's researches in the degeneration of the optic tract, and Flechsig's investigations into the development of various systems of fibres, all tend to the belief that there are definite tracts in the brain whose function it is to conduct special forms of nerve force.

Physiological experiment, added to the hints afforded by anatomy, certainly lends confirmation to this belief. Of course there are abundant sources of error. It is not easy to say whether the symptoms that follow the removal of a part of the brain are symptoms of arrest or symptoms of deficit, and, when the only final test in regard to this point is applied,—that of time,—another source of error arises. In all animals it is possible that there may be a certain amount of substitution in the brain; when one centre is destroyed its functions may be performed wholly or in part by some other centre. The lower down in the animal scale we go the more pronounced this substitution is, and experiment has shown that permanent loss of function is far less common from the destruction of given centres in the guinea-pig or rabbit than in the dog. Even in man, however, this substitution does occur in childhood; as, in the cases where, after destruction of the left third frontal and upper temporal convolutions in infancy, the child has learned to talk, and, when it reached adult life, it has become aphasic from lesion in the same region in the right hemisphere. Nevertheless, experiments on animals have shown, and continue to show, that after removal of certain portions of the cortex, there are permanent symptoms of deficit. Take, for instance, the experiments made to determine the visual centre, which Brown-Séquard thinks does not exist. Goltz, rejecting the theories of cluster-localization, showed two dogs at Baden-Baden in 1886 from which he had removed both occipital lobes, yet the animals could see. Such an experiment, therefore, would seem to disprove the theory of Munk that the occipital lobes contain the centres for vision, and that removal of both lobes will produce blindness. Goltz's methods, however, are not accurate. He has himself abandoned his earlier method of washing away the brain-tissue by a stream of water, as it has been proven that this method cannot be depended upon to remove definite portions of brain-tissue. Moreover, it was shown by Fritsch, at the Congress of Internal Medicine at Berlin, in 1884, that Goltz, even with his present methods, is not accurate in his "symmetrical" extirpations of portions of the cortex, and that his attempts at extirpation had not removed the regions which he claimed had been extirpated; for instance, that the entire region of both posterior extremities, and part of the centre for one anterior extremity, were intact when he claimed he had removed them. The difficulty of removing both occipital lobes is, in fact, so great, that Munk, who attempted to remove them in eighty-five dogs, succeeded in doing it completely and satisfactorily, and in keeping the animals alive in only four. The arguments against Munk's theories in regard to the centres of vision, therefore, cannot be accepted until Munk's experiments have been repeated, and until it has been shown that removal of the centres in the occipital lobes has been complete, and that the animals have still been able to see, which has not yet been done.

The symptoms seen after the removal of portions of the brain are in many cases permanent, and are symptoms of deficit rather than of arrest. Even if we assume that the lesion caused symptoms of arrest solely, it is hard to see why a lesion in one place would cause arrest of one function, and in another place arrest of another function, unless there is some localization of function in those regions: if a lesion anywhere can cause inhibition of any function, still accurate observations are wanting to show that lesion of the occipital lobes can cause monoplegia, or lesion of the ascending convolutions can cause blindness.

The weight of clinical evidence also seems to confirm the results of physiological experimentation. Many cases that have been reported are, of course, defective. The observation and the analysis of symptoms have not always been complete, and the observers have not always been competent. Post-mortem investigations, too, have been misleading from the defective knowledge of the anatomy of the brain. Nevertheless, the clinical evidence in favor of localization is too great to be set aside. Wilbrand's and Seguin's researches into the question of hemianopsia, for instance, have confirmed Munk's discoveries; and now that it is known that there are centres in different parts of the brain for each of the different functions of speech, and not one common centre, the cases where there has been a lesion in one of these recognized centres and no speech-disturbance have become much fewer, and the majority of them are too inaccurate to establish a theory.

The theory of exactly limited centres, the sharply-defined circles depicted by Ferrier, is probably not correct, nor is it certain that the psycho-motor centres are purely motor; in fact, it is more probable that the psycho-motor centres are, as Munk thinks, rather sensori-motor than purely motor. These centres, as Luciani and Seppilli think, and as

Horsley's observations seem to prove, probably overlap one another, and shade into one another, but that there are more or less distinctly localized centres for various functions in the cortex seems fairly well proven at the present day, and Brown-Séquard's views, instead of being novel, are, in spite of the weight of his name, merely a repetition of the theories of twenty years ago,—theories which are now abandoned by most physiologists.—*Boston Med. and Surg. Journ.*, April 19, 1888.

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*A DELICATE TEST FOR MORPHINE.*

When a solution of ferric chloride is added to a solution of a salt of morphine, MR. J. LESTER ARMITAGE (*Pharm. Journ. and Trans.*, March 10, 1888) states that a bluish-green coloration is produced. At the same time, in consequence of the reducing power of morphine, a part of the ferric chloride is reduced to the ferrous condition, as shown in the following equation:

$$2FeCl_6 + 2H_2O = 4FeCl_2 + 4HCl + O_2.$$

There is, however, a point of dilution (apparently about 1 in 2000) at which the coloration is imperceptible, though the reaction represented in the above equation appears to take place even in the most dilute solutions.

On this reaction is based a delicate test for morphine and its salts in solution, for if such a solution be treated with ferric chloride and then with ferri-cyanide of potassium, the latter will interact with the reduced ferrous chloride, with the formation of Turnbull's blue, which appears either as a deep blue precipitate or greenish-blue coloration, according to the strength of the solution of the alkaloid.

In a solution of 1 part of a salt of morphine in 20,000 parts of water the coloration is intensely green, and in a solution of 1 part in 50,000 the shade is still deep, though lighter. A solution of 1 in 100,000 gives the same result on standing a few moments, the coloration, even in this dilute solution, being unmistakable.

Other reducing substances would, of course, give the same results, but in the absence of such substances the above is a delicate confirmatory test for the presence of morphine. Several other alkaloids submitted to the above test did not give the coloration.

The reaction might be made the basis of a colorimetric process for the approximate estimation of morphine in very dilute solutions.

*A NEW DISINFECTANT.*

E. LAPLACE (*Pharm. Zeitung*) recommends crude sulpho-carbolic acid as a reliable bactericide and as a general disinfectant, inferior only to solutions of bichloride of mercury of the same strength, but having the advantage of being much less poisonous and considerably cheaper. It is obtained by mixing equal parts by weight of crude sulphuric acid and crude twenty-five per cent. carbolic acid, heating for a short time, and allowing to cool. This mixture is easily soluble in water. A four per cent. solution killed anthrax bacilli within forty-eight hours, which a two per cent. solution of pure carbonic acid was not able to do.—*Druggists' Circular*, May, 1888.

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*FURTHER OBSERVATIONS ON CREOLIN.*

DR. J. NEUDÖRFER has just contributed some articles to the *Internationale Klinische Rundschau* (April 22 and 29) which throw some further light on the nature and properties of creolin, a substance that is rapidly coming into professional favor in Germany and some other continental countries (*Lancet*, May 19, 1888). Its exact chemical composition is kept a secret by the manufacturers, the Creolin Company. An analysis by Dr. Bernard Fischer has been promised, but up to the present time it has not been published. Speaking roughly, creolin is prepared from coal-tar, the coal having to be, it is said, selected with great care. The benzol and carbolic acid are distilled off, and the residue is treated with resin and caustic soda, a fluid resin soap being the result. One thing is quite certain: creolin does not contain the smallest trace of carbolic acid, for Millon's reagent, which will detect this if contained in solution in the proportion of 1 in 2,000,000, is unaffected by creolin. It must not, however, be assumed that it cannot therefore possess toxic properties, for coal-tar contains several poisonous substances,—as anilin, fuchsin, mauvin, safranin, etc. In order to test the question, Dr. Neudörfer injected creolin into the venous circulation of two dogs which were under the influence of curare, and on whom tracheotomy had been performed. Arrangements were also made for taking tracings of the blood-pressure. A dose of .5 gramme of creolin per kilogramme of the dog's weight injected into the veins produced violent contortions and signs of pain, together with a high degree of salivation, the blood-pressure sinking at first, and afterwards fluctuating

greatly. In one case—that of a dog of six kilogrammes, where the initial pressure had been one hundred and thirty millimetres of mercury—it fell immediately after the first injection of 1 gramme to one hundred millimetres, and then rose to one hundred and eighty millimetres, the curve once touching two hundred and ten millimetres; there were during this time violent rigors. After these had ceased the pressure became one hundred and thirty millimetres again. A second gramme was then injected, which produced further rigors and fluctuations of the blood-pressure; while the third injection caused a sudden fall of the pressure and the death of the animal. Immediately after death the heart and pericardium were found to be greatly distended, the liver and the kidneys, as well as the cardiac cavities, being remarkably full of blood. The spleen formed a curious exception to the general state of congestion, being lax, shrivelled, and pale. No explanation of this could be found.

Passing to the therapeutic uses of creolin, Dr. Neudörfer states that it is, in his opinion, preferable as an antiseptic to carbolic acid, salicylic acid, iodoform, and corrosive sublimate. Mixed with water in the proportion of 1 to 5 per 1000, it is non-poisonous, and may be applied to wounds; it does not numb the hands of the surgeon or blunt instruments; and this mixture, if taken internally by mistake, does no harm. When applied to a suppurating surface the latter ceases to secrete pus, the dressings being merely stained with a greenish-yellow serum. Creolin has also a conservative action on the elements formed, the intercellular fluid being at the same time rendered more tenacious. This property, combined with the vaso-constrictor action, endues creolin with powerful styptic action. Creolin must be roughly classed as an "alterative," acting on the sensory, motor, and sympathetic nerves, and probably also on the nerve-centres. It must be remembered that creolin is insoluble in, and therefore incompatible with, ether and alcohol, and so should not be prescribed with tinctures. The gauze impregnated with creolin which is generally sold is, according to the author, too strong, containing five to ten per cent. of creolin. He considers one per cent. quite strong enough, but prefers to use a freshly-prepared solution of 1 to 5 per 1000 for moistening his dressings. A powder may be made of creolin and asbestos (alumen plumosum) in the proportion of 5 to 100. Mixed with olive oil, in the proportion of 5 to 10, creolin may be used for needles, catheters, trocars, etc. For operative sponges, Dr. Neudörfer recommends boiling for two hours in a two per cent. solution of creolin after each operation, the same solution being used to keep them in. Creolin may be used in various ways in gonorrhœa. Recently Dr. Neudörfer has been using hard bougies, ten centimetres in length, containing one to three centigrammes of creolin and .02 gramme of cocaine. In strangury and chordee, injections of 10 cubic centimetres of creolin oil (1 in 3) are more efficacious than injections of narcotics. In large burns a weak mixture with oil and water (2 of creolin to 100 of linseed oil and 100 of water) is very useful; cocaine may of course be used simultaneously. A soap of creolin and saccharin has been prepared. Creolin has been given internally in phthisis, in cancer, and in locomotor ataxia. With regard to this, however, the only observations published are to the effect that it is quite harmless.

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### *LANOLIN.*

Lanolin alone is said by PROFESSOR FRAENKEL, in the *Chemische Zeitung*, to be an excellent application in incised wounds and burns. In incised or lacerated wounds, bleeding is said to cease immediately, and the wound may even be bathed in rapidly-running water without removal of the lanolin. In burns, also, it is said to be most excellent, and prevents the formation of crusts and scabs, while entirely protecting the surface from the atmosphere.—*National Druggist*, May 1, 1888.

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### *GLASSBLOWERS' CRAMP.*

M. PONCET has made a communication to the Académie des Sciences upon the subject of a professional deformity of the hand, to which he says attention has not heretofore been drawn. The deformity is by him described as consisting in a permanent and very pronounced flexion of the fingers upon the hand, which is more pronounced in the case of the third and fourth fingers than the other two, and leaves the thumb wholly unaffected. The flexion occurs principally at the second joint, so that the second phalanx is fixed almost at right angles to the first, and it is attributable not to sclerosis of the skin or tightening of the deeper tissues, but to retraction of the flexors and tendons, and more particularly of the superficial flexor. At this

diagnosis the author has arrived by a careful examination of the affected fingers, and he argues much from the circumstance that the malady is unaccompanied by pain. The distal joints are more or less deformed, with some tendency to subluxation, and the fingers are bent into a curve and cannot be extended. The skin of the palmar surface is somewhat thicker, and more callous than is usual even with manual laborers. This deformity is known among glass-workers as *main en crochet* or *main fermée*. It supervenes after a short practice of the art of glassblowing, and increases progressively. It is further stated upon the authority of an expert (M. E. Rollet) that it attacks the majority of glassblowers, and is most marked in those who have been longest at the work. M. Poncet thinks that the deformity which he has described is due to the continuous application of the hand to the tube with which a glassblower manipulates his "metal." He stated that, during the eight hours a day through which such a man ordinarily works, his fingers are without intermission kept closed about this tube, and the constraint induces, even within a month, some difficulty in effecting complete extension. This difficulty becomes greater and greater as time runs on, until at last it develops into the crippled condition of the hand which he has described. Altogether, he says, the trade of the glassblower, as pursued in France, is so unhealthy that the operatives, who habitually take it up as young men, are obliged to abandon it on attaining about thirty-five years of age, and do so with their hands permanently crippled in such a way as to render them useless for almost any other occupation.—*Lancet*, April 21, 1888.

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### *POISONING BY IODINE.*

According to M. Duret, intoxication by iodine is manifested in three distinct forms: the eruptive, the cerebral or delirious, the syncopal or hypothermic. The eruptive form is the most frequent. It is characterized by a rubeolar eruption appearing on the different parts of the body, and far removed from the point of application. The poisonous and iodized principles are absorbed by the body, and this eruption is probably caused by the eliminating process carried on through the gland of the skin. The second form is characterized by epileptic symptoms, or by fits of sleeplessness accompanied by delirium. The third form is more serious. The absorption of the iodine is followed by a large increase or decrease in the temperature, sometimes falling as low as 34.6°. The symptoms cease as soon as the iodine is withheld. Thus, if the use of iodine is valuable on account of its antiseptic properties, it must be employed with discretion, as in many cases it has all the inconveniences of sluggish medicines and provokes lymphangitis and phlegmon. M. Duret has twice observed inflammation produced by its use in wounds on the hands and fingers. The inflammation ceased when the use of iodine was discontinued.—*London Med. Recorder*, April 20, 1888.

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### *A SALVE FOR BURNS.*

A salve for burns, said to be most excellent where the blisters are not broken, is made, according to the *Droguisten Zeitung*, by adding 1 part of creasote, 2 parts of bone-black, and 3 parts of rectified spirit to 24 parts of spermaceti salve.—*National Druggist*, May 1, 1888.

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### *CHLOROFORM-WATER AS AN ANTISEPTIC.*

Professor E. Salkowski has an article on this subject in the current issue of the *Deutsche Medicinische Wochenschrift*. He has used chloroform for some years to preserve urine from decomposition (a few drops added to a specimen preserve its acid reaction apparently for any length of time), and has lately examined the action of chloroform-water upon former ferments and on some pathogenic bacteria. Chloroform well shaken up with water, in the proportion of 1 to 200, dissolves perfectly at the ordinary temperature, and it was found that such a solution prevents the occurrence of all fermentations which are dependent on the vitality of micro-organisms,—for example, alcoholic fermentation, ammoniacal urine-fermentation, the fermentative decomposition of hippuric acid, lactic-acid fermentation, and the bacterial decomposition of albumen,—while it has no influence upon unorganized soluble ferments (enzymes), and therefore does not affect the action of ptyalin, pepsin, trypsin, invertin, diastase, etc. The latter fact was known already. Of course, in this use of chloroform, care must be taken that it does not escape by evaporation; the bottle should be well corked or stoppered. Thus used, chloroform is convenient for revealing the presence of minimal

quantities of ferments, the actions of which are only developed after some months; for the observation may be continued as long as desirable, without the intervention of any micro-organisms, and chloroform, while it can be removed from a liquid when desirable, does not injure the nutrient substratum. This is well shown in milk shaken up with a little chloroform and kept in a closed vessel. After some months the casein and fat separate, but a clear albuminous fluid remains, just as in sterilized milk. Solutions of cane- or grape-sugar shaken up with yeast do not ferment, but the sugar is inverted by next day, the inverting ferment of yeast being a soluble ferment, and therefore unaffected by chloroform. Albuminous liquids are sterile with chloroform-water, and even meat in small pieces may be thus preserved without essential alteration, though a certain degree of rancidity may be perceived after a time from the gradual oxidation of fat. But chloroform has a powerful disinfectant and destructive action upon bacteria already present. A putrid-meat infusion is rendered sterile by it in a few hours, and the same destructive action is exerted upon the bacillus anthracis (though not on the spore-form) and on the comma bacillus. The chief use of chloroform as a disinfectant will probably lie in the preservation of solutions of the soluble ferments, the action of the latter not being influenced by it, but various other uses suggest themselves, both pharmaceutical and therapeutical. Chloroform-water is well tolerated by the system. In a supplementary note Professor Salkowski writes to the effect that most of the ethylic chlorine compounds possess antiseptic properties, and that chloroform, from its superior volatility, is the best as a respiratory antiseptic.—*British Med. Journ.*, May 5, 1888.

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### *A NEW REMEDY FOR PULMONARY TUBERCULOSIS.*

FRAENTZEL, in the *Deutsche Medicinische Wochenschrift*, No. 7, 1888, strongly advises the use of guajakol in phthisis instead of creasote. The drug is very highly spoken of by various German authorities. Fraentzel states among four or five hundred cases sixteen or twenty will undoubtedly be cured by the drug. The drug has been used in the Charity Hospital in Berlin as a substitute for creasote for some time past, and its use has been attended with altogether satisfactory results. The formula used is as follows:

℞ Guajakol, 13.5 parts;
Tinct. gentian., 30 parts;
Spirit. vini rectificatiss., 250 parts;
Vini xerici, q.s. ad colat. 1000 parts.
S.—A tablespoonful two or three times daily.

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### *TREATMENT OF GREEN DIARRHŒA IN INFANTS.*

Green diarrhœa in infants has for some time past been successfully treated with lactic acid, but recently there have been many reports of failures with the remedy. As pointed out by M. HAVEM (*Fortschritte der Medizin*), the dose employed in these reported cases was too low. To be efficient the two per cent. solution of lactic acid usually employed should be repeated every half-hour during the day. The infant should get not less than 15 or 20 teaspoonfuls of the remedy in the twenty-four hours. When thus used it is almost specific in its action.—*National Druggist*, May 1, 1888.

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### *ERYTHROPHLŒINE.*

According to the Vienna correspondent of the *Brit. Med. Journ.*, April 14, 1888, at a recent meeting of the Society of Physicians of Styria, PROFESSOR LIPP, of Graz, gave an account of the results of his experiments with erythrophlœine on thirty persons. He used Merck's "erythrophlœinum muriaticum," and made injections of doses varying from 1 milligramme to 1 centigramme ($\frac{1}{100}$ to $\frac{1}{1000}$ grain). He had never observed any bad general after-effects, except in the case of a neurotic woman, who, after the injection of 1 centigramme of erythrophlœine, showed retardation of the pulse and respiration, and was attacked with giddiness. He made the injections under the epidermis, as well as under the skin. In each instance analgesia (not anæsthesia, as tactile sensation remained intact) was established over a large area round the point of injection; the analgesia lasted forty-eight hours. The local appearances were intense redness, swelling, and pain. The intensity of the local symptoms, however, depended more on individual irritability than on the strength of the dose used. The most remarkable feature in the experiments with erythrophlœine, in Professor Lipp's opinion, was the development of peripheral analgesic areas, which persisted in this condition for several hours, and even for some days after the injection. These territories corresponded to those which were supplied by nerve-branches taking origin near the seat of injection.

### *A NEW ANTISEPTIC SOAP.*

Until quite recently a satisfactory soap containing as an antiseptic one of the salts of mercury has been difficult to prepare on account of the alkaline soap refusing to yield a good lather, oleate of mercury being formed, a compound which has little or no germicidal action. One of the most powerful antiseptics of the mercury salts is, as is well known, the bichloride. Moreover, it is cheap and easily soluble, but it has the disadvantages of being extremely poisonous and easily reduced by albuminoid matter, with which it combines, thus being rendered inactive. In a paper recently read before the Society of Chemical Industry in Glasgow by JOHN THOMSON, the solubility of the red biniodide of mercury (which is claimed to be even a more powerful antiseptic than the bichloride) in iodide of potassium has been made use of. A soap can thus be easily prepared containing a certain proportion of the biniodide in a soluble form. It is stated to be permanent, having no tendency to separate, and to be more germicidal in its properties than any other antiseptic soap yet known. Experiments were made to demonstrate this. Sterilized silk threads were suspended in a solution of the biniodide soap (one gramme of soap in one hundred and twenty cubic centimetres of water) for ten minutes, after being saturated with solutions containing well-known micro-organisms, among which were streptococcus scarlatinæ (Klein), bacillus subtilis, orange sarcina, white bacillus from Tweed water, organisms from putrid urine, the micrococcus of osteomyelitis, aspergillus nigrescens, spores from various fungi, yellow micrococcus from pus, putrefactive organisms, bacterium termo, and bacillus scarlatinæ (Edington). The threads were then carefully washed to remove the soap, and placed in sterilized gelatin in the ordinary way. The threads were controlled by first sterilizing, and then plunging into nutrient gelatin; if no growth occurred, they were accepted as being fit for use in the experiment. Washing the threads previously contaminated with organisms two or three times carefully with distilled water was shown by experiment not to remove the organisms, for on being placed in the gelatin growth readily took place. The results, as shown in tables, are very remarkable. In all the experiments, with a few very uncertain exceptions, growth of the organisms was completely prevented, even after the lapse of four days. Similar experiments made with "carbolate of mercury" soap showed it to be less powerful as a disinfectant, and much slower in its germicidal action. In experiments carried out in the same manner with other antiseptic and ordinary soaps, it was shown that the growth of the organisms in many cases was not prevented. The importance of such a soap in medical and sanitary science is very obvious. The biniodide soap has been used in the treatment of eczema with well-marked success, especially where the irritation is due to the fermentations of accumulated secretions, the fermentation being set up by micro-organisms. It has also met with similar success when used in parasitic skin-diseases, such as favus and ringworm. As a parasiticide, too, the importance of its application to patients during the period of desquamation in scarlet fever is evident.—*Brit. Med. Journ.*, May 12, 1888.

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### *HYDRATE OF MORPHINE.*

Hydrate of morphine crystallizes with one molecule of water of crystallization, and this it does not lose unless heated to 100° C.

D. B. DOTT has, however, proved experimentally that this rule is not always positive, as he has frequently observed hydrate of morphine to lose all water at 90° C. The hydrate is hygroscopic, and its formula should be $C_{17}H_{19}NO_3(H_2O)1\frac{1}{8}$, or, more correctly still,

$$8C_{17}H_{19}NO_3,9H_2O.$$

—*Pharmaceutische Post*, March 18, 1888.

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### *INFECTION OF A CHILD FROM THE MILK OF A WET-NURSE.*

DR. J. STEIGENBERGER writes to the *Centralblatt für Therapie* of March last of the case of a 6 months' old boy, who was of a family whose history was free from tuberculosis, who had had six wet-nurses, but up to his fifth month had been perfectly healthy. At this time, however, a lymphatic swelling appeared in the right angle of the jaw, and it was now remembered that the third nurse of the child, who had nursed him during his third month of age, had complained of suffering in the chest, and was found to have tuberculosis. The adenitis was examined, and found to contain tubercle-bacilli.